

THE MONIST.

THE PRESENT POSITION OF LOGICAL THEORY.

THE remarkable fact in the intellectual life of to-day is the contradiction in which it is entangled. On one hand we have an enormous development of science, both in specialisation of method and accumulation of material ; its extension and thorough-going application to all ranges of experience. What we should expect from such a movement, would seem to be confidence of intelligence in itself ; and a corresponding organisation of knowledge, giving some guide and support to life. The strange thing is that instead of this we have, probably, the greatest apparent disorganisation of authority as to intellectual matters that the world has ever seen ; while the prevalent attitude and creed of scientific men is philosophic agnosticism, or disbelief in their own method when it comes to fundamental matters. Such a typical representative of modern science as Mr. Huxley virtually laughs to scorn the suggestion of Mr. Frederic Harrison that science should or could become so organised as to give any support, any authoritative stay, to life.

Now I do not intend to discuss this apparent contradiction. It seems to me obvious enough that the contradiction is due to the fact that science has got far enough along so that its negative attitude towards previous codes of life is evident, while its own positive principle of reconstruction is not yet evident. But without urging this view upon the reader, I wish to ask how and where in the prevailing confusion logical theory, as a synopsis of the methods and

typical forms of intelligence, stands. Logical theory at once reflects and transforms the existing status of matters intellectual at any period. It reflects it, for logical theory is only the express, the overt consciousness on the part of intelligence of its own attitude, prevailing spirit. It transforms it, because this express consciousness makes intelligence know where it stands, makes it aware of its strength and of its weakness, and by defining it to itself forces it to take up a new and more adequate place.

It is obvious, then, that as the prevailing influence in the intellectual world to-day is science, so the prevailing influence in logical theory must be the endeavor to account for, to justify, or at least to reckon with this scientific spirit. And yet if there is such confusion as we have indicated, then there is also manifested some chaos in logical theory, as to the true nature and method of science. Were it otherwise, were there at present a logical theory adequate to the specific and detailed practical results of science, science and scientific men would be conscious of themselves, and would be confident in their work and attitude.

The especial problem of logic, as the theory of scientific method, is the relation of fact and thought to each other, of reality and thought. It is, however, differentiated from the metaphysical theory of knowledge. Logic does not inquire into the ultimate *meaning* of fact and thought, nor into their *ultimate* relations to one another. It simply takes them from the attitude of science itself, its business being, not the justification nor refutation of this attitude, but its development into explicit doctrine. Fact means to logic no more, but certainly no less, than it means to the special sciences: it is the subject-matter under investigation, under consideration; it is that which we are trying to make out. Thought too means to logic what it means to science: method. It is the attitude and form which intelligence takes in reference to fact—to its subject-matter, whether in inquiry, experiment, calculation, or statement.

Logic, then, would have for its essential problem the consideration of the various typical methods and guiding principles which thought assumes in its effort to detect, master, and report fact. It is presupposed here that there is some sort of fruitful and intrinsic

connection of fact and thought ; that thinking, in short, is nothing but the fact in its process of translation from brute impression to lucent meaning.

But the moment such a presupposition is stated, ninety-nine persons out of a hundred think that we have plunged, *ex abrupto*, from the certainty of science into the cloudland of metaphysic. And yet just this conception of the relation of thought (method) to fact (subject-matter) is taken for granted in every scientific investigation and conclusion. Here, then, we have in outline the present position of logic. It is that any attempt to state, in general, or to work out, in detail, the principle of the intrinsic and fruitful relation of fact and thought which science, without conscious reflection, constantly employs in practice, seems "metaphysical" or even absurd. Why is this? The answer to this question will give the filling-up of the outline just presented.

The chief cause is that superstition which still holds enthralled so much of modern thought—I mean formal logic. And if this seems like applying a hard name to what, at best and at worst, is only an intellectual gymnastic, I can only say that formal logic seems to me to be, at present, *fons et origo malorum* in philosophy. It is true enough that nobody now takes the technical subject of formal logic very seriously—unless here and there some belated "professor." It is true that it is generally relegated to the position of a subject which, for some unclear reason, is regarded as "disciplinary" in a young man's education ; just as certain other branches are regarded as elegant accomplishments in a young woman's finishing. But while the subject itself as a doctrine or science hardly ranks very high, the conception of thought which is at the bottom of formal logic still dominates the *Zeitgeist*, and regulates the doctrine and the method of all those who draw their inspiration from the *Zeitgeist*. Any book of formal logic will tell us what this conception of thought is : that thought is a faculty or an entity existing in the mind, apart from facts, and that it has its own fixed forms, with which facts have nothing to do—except in so far as they pass under the yoke. Jevons puts it this way : "Just as we thus familiarly recognise the difference of form and substance in common

tangible things, so we may observe in logic, that the form of an argument is one thing, quite distinct from the various subjects or matter which may be treated in that form." *

Professor Stock varies the good old tune in this way: "In every act of thought we may distinguish two things—(1) the object thought about, (2) the way in which the mind thinks of it. The first is called the Matter; the second the Form of Thought. Now formal . . . logic is concerned only with the way in which the mind thinks, and has nothing to do with the particular objects thought about." †

It is assumed, in fine, that thought has a nature of its own independent of facts or subject-matter; that this thought, *per se*, has certain forms, and that these forms are not forms which the facts themselves take, varying with the facts, but are rigid frames, into which the facts are to be set.

Now all of this conception—the notion that the mind has a faculty of thought apart from things, the notion that this faculty is constructed, in and of itself, with a fixed framework, the notion that thinking is the imposing of this fixed framework on some unyielding matter called particular objects, or facts—all of this conception appears to me as highly scholastic, as the last struggle of mediævalism to hold thought in subjection to authority. Nothing is more surprising than the fact that while it is fashionable to reject, with great scorn, all the results and special methods of scholasticism, its foundation-stone should still be accepted as the corner-stone of the edifice of modern doctrine. It is still more surprising when we reflect that the foundation-stone is coherent only with the mediæval superstructure. The scholastics when they held that the method of thought was a faculty pursuing its own method apart from the course of things, were at least consistent. They did not conceive that thought was free, that intelligence had rights, nor that there was possible science independent of data authoritatively laid down. Really believing what they professed,—that thought was something *in se*,—

* Jevons, *Elementary Lessons in Logic*, p. 5.

† Stock, *Deductive Logic*, p. 3.

they held that it must be supplied with a fixed body of dogmatic fact, from tradition, from revelation—from external authority. They held that thought in its workings is confined to extracting from this dogmatic body of fact what is already contained in it, and to rearranging the material and its implications. To examine the *material*, to test its truth; to suppose that intelligence could cut loose from this body of authority and go straight to nature, to history itself, to find the truth; to build up a free and independent science—to this point of incoherency mediæval scholasticism never attained. To proclaim the freedom of thought, the rejection of all external authority, the right and the power of thought to get at truth for itself, and yet continue to define thought as a faculty apart from fact, was reserved for modern enlightenment! And were it not somewhat out of my present scope, I should like to show that modern culture is thus a prepared victim for the skilful dialectician of the reactionary army. If the modern *Zeitgeist* does not fall a prey to the cohorts of the army of external authority, it is not because it has any recognised methods or any recognised criterion by which it can justify its raising the “banner of the free spirit.” It is simply the obstinate bulwark of outer fact, built up piecemeal by science, that protects it.

The two main forces, which have been at work against the formulæ of formal logic, are “inductive” or empirical logic on one side, and the so-called “transcendental” logic, on the other. Of these two, the influence of inductive logic in sapping in practical fashion and popular results the authority of syllogistic logic has undoubtedly been much the greater. I propose, briefly, to give certain reasons for holding, however, that the inductive logic does not furnish us with the needed theory of the relation of thought and fact. To show this adequately would demand the criticism of inductive logic in the detail of its methods, in order to show where it comes short. As this is impossible, I shall now confine myself to a couple of general considerations.

To begin with, then, the empirical logic virtually continues the conception of thought as in itself empty and formal which characterises scholastic logic. It thus has really no theory which differ-

entiate it, as regards the nature of thought itself, from formal logic. I cannot see, for example, what quarrel the most stringent upholder of formal logic can have with Mill as to the latter's theory of the syllogism. Mill's theory is virtually simply a theory regarding the formation of the major premiss—regarding the process by which we formulate the statement that All *S* is *P*. Now, if we once accept the syllogistic position, this process lies outside the scope and problem of formal logic. It is not an affair of what Jevons calls the form of argument at all, but simply of the matter, the particular facts which make the filling of the argument. I do not see that it is any part of the business of formal logic to tell where the major premiss comes from, nor how it is got. And, on the other hand, when it comes to the manipulation of the data contained in the premiss, Mill must fall back upon the syllogistic logic. Mill's theory, so far as the thought-element is concerned, presupposes the syllogistic theory. And if this theory, on its side, does not presuppose something like Mill's inductive theory, it is simply because the logician, as a *philosopher*, may prefer "intuitionism" to "empiricism." He may hold, that is, that the content of some major premisses is given by direct "intuition" rather than gathered from experience. But in either case, this consideration of the source of the content of the premiss belongs not to formal logic, but to metaphysics.

If, then, the theory of the syllogism is incorrect in its assumptions as to the relation of fact and thought, the inductive logic must be similarly in error. Its great advantage over the old scholastic logic lies not in its logic as such, but in something back of the logic—in its account of the derivation of the material of judgment. Whatever the defects of Locke's or Mill's account of experience, any theory which somehow presupposes a first-hand contact of mind and fact (though it be only in isolated, atomic sensations) is surely preferable to a theory which falls back on tradition, or on the delivery of dogma irresponsible to any intellectual criticism. But in its account of the derivation of the material of judgment, inductive logic is still hampered by the scholastic conception of thought. Thought, being confined to the rigid framework in which the material is manipulated after being obtained, is excluded from all share in

the gathering of material. The result is that this material, having no intrinsic thought-side, shrinks into a more or less accidental association of more or less shifting and transitory mental states.

I shall not stop to argue that, on this ground, the "inductive" logic deprives science of its most distinctive scientific features—the permanence and objectivity of its truths. I think no one can deny that there is at least an *apparent* gap between the actual results of concrete science and these results as they stand after the touch of the inductive logic—that the necessity and generality of science seem rather to have been explained away, than explained. I think most of the inductive logicians themselves (while endeavoring to account for this apparent necessity as generated through association) would admit that something of science *seems*, at least, to have been lost, and that the great reason for putting-up with this loss is that the inductive logic is the sole alternative to a dogmatic intuitionism and to arbitrary spinning-out of *a priori* concepts.

Certainly as long as thought is conceived after the fashion of syllogistic logic, as a scheme furnished and fixed in itself, apart from reality, so long scientific men must protest against allowing thought any part or lot in scientific procedure. So long some such *modus operandi* as that given by Mill must be resorted to in order to explain scientific methods and results. But, on the other hand, if the scholastic idea of thought as this something having its character apart from fact is once given up, the cause which at present cramps the logic of science into the logic of sensationalism and empiricism is also given up. And this brings us to the other point in general regarding the inductive or empirical logic. It is not strictly a logic at all but a metaphysic. It does not begin with the fact of science, the fact of the fruitful inquiry into fact by intelligence, at all. It does not, starting from this fact analyse the various methods and types which thought must take upon itself in order to maintain this fruitful inquiry. On the contrary, it begins with sensations, and endeavors by a theory of knowledge on the basis of sensationalism to build up the structure of cognition, ordinary and scientific. I am not concerned here with the truth of sensationalism as a metaphysical theory of knowledge, nor with the adequacy of the notion of

sensation advanced by Mill. It is enough from the logical point of view to point out that such a theory is not logic—that logic does not deal with something *back* of the fact of science, but with the analysis of scientific method as such. And is it forcing matters to indicate that this retreat from logic to metaphysic is also caused by the syllogistic notion of thought? Formal thought, with its formulæ for simply unfolding a given material, is of no use in science. There is, therefore, the need of some machinery to take the place of thought. And this is found in sensation and in “experience” according to the peculiar notion of experience current in the inductive logic.

In a word, then (without attempting to show the insufficiency of inductive logic as the theory of science by reference to its treatment of specific points) inductive logic does not meet our needs because it is not a free, unprejudiced inquiry into the special forms and methods of science, starting from the actual sciences themselves. It is founded and built up with constant reference to the scholastic notion of thought. Where it is not affected positively by it, it is still affected by its reaction from it. Instead of denying once for all validity or even sense to the notion of thinking as a special, apart process, and then beginning a free, unhampered examination with an eye single to the fact of science itself, it retains this conception of thought as valid in a certain department, and then sets out to find something to supply the gap in another department. And thus we have the usual division of inductive and deductive logic, inductive being interpreted as empirical and particular, deductive as syllogistic and formal. They are counterpart and correlative theories, the two sides of the notion of the separateness of fact and thought; they stand and fall together.

“Transcendental” logic, while usually conceived as utterly opposed in spirit and in results to inductive logic, has yet been one with it in endeavoring to abolish formal logic as the sufficient method and criterion of scientific truth. I say this although well aware that inductive logic is usually conceived as specifically “scientific,” while the transcendental movement is regarded as the especial foe of science—as a belated attempt to restore an *a priori* scholasticism,

and to find a scheme for evolving truth out of pure thought. This is because when the "transcendental" school talks of thought, of the synthetic and objective character of thought, of the possibility of attaining absolute truth through thought, and of the ontological value of thought, it is understood as meaning thought in the old, scholastic sense, a process apart and fixed in itself, and yet somehow evolving truth out of its own inner being, out of its own enclosed ruminations. But on the contrary, the very meaning of "transcendentalism" is not only that it is impossible to get valid truth from the evolution of thought in the scholastic sense, but that there is no such thought at all. Processes of intelligence which have their nature fixed in themselves, apart from fact and having to be externally applied to fact, are pure myths to his school. Types of thought are simply the various forms which reality progressively takes as it is progressively mastered as to its meaning,—that is, understood. Methods of thought are simply the various active attitudes into which intelligence puts itself in order to detect and grasp the fact. Instead of rigid moulds, they are flexible adaptations. Methods of thought fit fact more closely and responsively than a worn glove fits the hand. They are only the ideal evolution of the fact,—and by "ideal" is here meant simply the evolution of fact into meaning.

If this is a fair description of what the "transcendental" school means by thought, it is evident that it is a co-worker with the spirit and intent of "inductive" logic. Its sole attempt is to get hold of and report the presupposition and rationale of science; its practical aim is to lay bare and exhibit the method of science so that the true seat of authority—that is, the authority, the *backing*, of truth—shall be forever manifest. It has simply gone a step further than "inductive" logic, and thrown overboard once for all the scholastic idea of thought. This has enabled it to start anew, and to form its theory of thought simply by following the principles of the actual processes by which man has, thus far in history, discovered and possessed fact.

I shall not attempt here any defence of the "transcendental" logic; I shall not even attempt to show that the interpretation of it

which I have given above is correct. It must go, for the present, simply as my individual understanding of the matter. Simply taking this view of "transcendental" logic for granted, I wish, in order to complete our notion of the present position of logic, to consider the reasons which have thus far prevented, say, the Hegelian logic from getting any popular hold—from getting recognition from scientific men as, at least in principle, a fair statement of their own basic presupposition and method.

The first of these reasons is that the popular comprehension of the "transcendental" movement is arrested at Kant and has never gone on to Hegel. Hegel, it is true, overshadowed Kant entirely for a considerable period. But the Hegelian régime was partly pyrotechnical rather than scientific in character; and, partly, so far as it was scientific, it exhausted itself in stimulating various detailed scientific movements—as in the history of politics, religion, art, etc. In these lines, if we trust even to those who have no faith in the Hegelian method or principles, the movement found some practical excuse for being. But the result of the case was—and its present status is—that because the principle of Hegel was, for the time, lost either in display of dialectical fireworks, or in application to specific subjects, the principle itself has never met with any *general* investigation. The immense amount of labor spent on Kant during the past twenty years has made method and principle familiar, if not acceptable, to the body of men calling themselves educated. And thus, so far as its outcome is concerned, the transcendental movement still halts with Kant.

Now, at the expense of seeming to plunge myself deeper in absurdity than I have already gone, I must say that the Kantian principle is by far more "transcendental" in the usual interpretation of that term—more *a priori*, more given to emphasising some special function of some special thought-power—than the Hegelian. As against the usual opinion that while some compromise between science and Kant is possible, the scientific spirit and Hegel are at antipodes, it appears to me that it is Kant who does violence to science, while Hegel (I speak of his essential method and not of any particular result) is the quintessence of the scientific spirit. Let me

endeavor to give some reasons for this belief. Kant starts from the accepted scholastic conception of thought. Kant never dreams, for a moment, of questioning the existence of a special faculty of thought with its own peculiar and fixed forms. He states and restates that thought in itself exists apart from fact and occupies itself with fact given to it from without. Kant, it is true, gives the death-blow to scholasticism by pointing out that such a faculty of thought is purely analytic—that it simply unfolds the material given, whether that material be true or false, having no method of arriving at truth, and no test for determining truth. This fact once clearly recognised, dogmatic rationalism, or the attempt to get truth from the “logical” analysis of concepts was forever destroyed. The way was opened for an independent examination of the actual method of science.

But while Kant revealed once for all the impossibility of getting truth, of laying hold of reality, by the scholastic method, he still retained that conception of thought. He denied, not its existence, but its worth as relates to truth. What was the result? Just this: when he came to his examination (criticism) of knowledge, it fell apart at once into two separate factors, an *a priori* and a *posteriori*. For if Kant finds, as against the dogmatic rationalist, that formal thought cannot give knowledge, he also finds, as against the sceptical empiricist, that unrelated sensation cannot give knowledge. Here too, instead of denying, *in toto*, the existence of unrelated sensation, he contented himself with denying its functional value for knowledge. Unrelated sensation and formal thought are simply the complementary halves of each other. Admit the one, and the other is its necessary counterpart.

Kant must now piece together his two separated factors. Sensation, unrelated manifold of sensation, is *there*, thought, isolated, analytic thought, is *here*. Neither is knowledge in itself. What more natural than to put them together, and hold that knowledge is the union of a matter or stuff, of sensations, atomic in themselves, on one hand, and a form, or regulating principle of thought, empty in itself, on the other? We have two elements, both existing in isolation, and yet both useless for all purposes of knowledge. Combine them, and presto, there is science.

Such a "transcendentalism" as this may well stick in the crop of scientific men. For consider what is involved in it: an *a priori* factor, on one side, and an *a posteriori*, on the other. Kant, from one point of view, seems thus to have simply combined the weaknesses of empiricism and rationalism. He still continues to talk of experience itself as particular and contingent, and denies that it gives a basis for any universal laws. Aside from his effort in the "*Kritik der Urtheilskraft*" to overcome his original separation, special scientific laws are to him only more or less extensive generalisations from experience—as much so to him as to Locke, or Mill. Scientific men indeed, have accustomed themselves to this derogation of their own methods and results, and, as "inductive" logicians, indulge in it quite freely themselves. But an *a priori* element, supplied by a thought fixed and separate, scientific men cannot do away with. Nor do I know any reason why they should.

It is coming short, in my opinion, of the full stature of science to treat it as a quantitative and varying generalisation of contingent particulars, but this, at least, leaves what science there is free and unhindered. But *a priori* elements supplied from outside the fact itself, *a priori* elements somehow entering into the fact from without and controlling it—this is to give up the very spirit of science. For if science means anything, it is that our ideas, our judgments may in some degree reflect and report the fact itself. Science means, on one hand, that thought is free to attack and get hold of its subject-matter, and, on the other, that fact is free to break through into thought; free to impress itself—or rather to express itself—in intelligence without vitiation or deflection. Scientific men are true to the instinct of the scientific spirit in fighting shy of a distinct *a priori* factor supplied to fact from the mind. Apriorism of this sort must seem like an effort to cramp the freedom of intelligence and of fact, to bring them under the yoke of fixed, external forms.

Now in Hegel there is no such conception of thought and of *a priori*, as is found in Kant. Kant formulated the conception of thought as objective, but he interpreted this as meaning that thought subjective in itself becomes objective when synthetic of a given sense-manifold. When Hegel calls thought objective he means just what

he says : that there is no special, apart faculty of thought belonging to and operated by a mind existing separate from the outer world. What Hegel means by objective thought is the meaning, the significance of the fact itself ; and by methods of thought he understands simply the processes in which this meaning of fact is evolved.

There has been, of late, considerable discussion of the place and function of "relations" in knowledge. This discussion in English speculation, at least, tends to turn largely about Thomas Hill Green's reconstruction of Kantianism. I consider it unfortunate that this discussion has taken the form of a debate between empiricism and Kantianism. The question of knowledge has thus come to be whether or not certain relations are supplied by thought to sensations in order to make an orderly whole out of the latter, chaotic in themselves. Now when Hegel talks of relations of thought (not that he makes much use of just this term) he means no such separate forms. Relations of thought are, to Hegel, the typical forms of meaning which the subject-matter takes in its various progressive stages of being understood. And this is what a *a priori* means from a Hegelian standpoint. It is not some element in knowledge ; some addition of thought to experience. It is experience itself in its skeleton, in the main features of its framework.

"Refutations" of Hegel, then, which attempt to show that "thought" in itself is empty, that it waits for content from experience, that it cannot by any manipulation evolve truth out of itself are, if taken as having relevance to Hegel, simply meaningless. Hegel begins where these arguers leave off. Accepting all that they can say, he goes one step further, and denies that there is any such "thought" at all anywhere in existence. The question of the relations or "categories of thought" is just the question of the broad and main aspects of fact as that fact comes to be understood.

For example, Kant would prove the *a priori* character and validity of the principle of causation by showing that without it science is impossible, that it helps "make experience." Now, in terms, Hegel's justification of this relation would be the same ; he too would show that the fabric of experience implies and demands the causal relation. But in Kant's case, the justification of the

principle of causality by reference to the possibility of experience means that thought must continually inject this principle *into* experience to keep it from disappearing: that experience must be constantly braced and reinforced by the synthetic action of thought or it will collapse. In short, the need of experience for this principle of causation means its need for a certain support outside itself. But Hegel's demonstration of the validity of the causal principle is simply pointing out that the whole supports the part, while the part helps make the whole. That is to say, Hegel's reference is not to some outside action of thought in maintaining fact as an object of knowledge; it is to the entire structure of fact itself. His contention is simply that the structure of fact itself, of the subject-matter of knowledge, is such that in one of its phases it presents necessarily the aspect of causality. And if this word "necessarily" gives pause, it must be remembered what the source of this necessity is. It does *not* lie in the principle of causation *per se*; it lies in the whole fact, the whole subject-matter of knowledge. It is the same sort of necessity as when we say that a complete man *must* have an eye; i. e., it is the nature of the human organism to develop and sustain this organ, while the organ, in turn, contributes to and thus helps constitute the organism.

It is then evident that the question upon which the "refutation" of Hegel turns is not in showing that formal "thought" cannot give birth to truth except through the fructifying touch of experience. The question is simply whether fact—the subject-matter of knowledge—is such as Hegel presents it. Is it, in general, a connected system as he holds it to be? And, if a system, does it, in particular, present such phases (such relations, categories) as Hegel shows forth? These are objective questions pure and simple; questions identical, in kind, with the question whether the constitution of glucose is what some chemist claims to have found it.

This, then, is why I conceive Hegel—entirely apart from the value of any special results—to represent the quintessence of the scientific spirit. He denies not only the possibility of getting truth out of a formal, apart thought, but he denies the existence of any faculty of thought which is other than the expression of fact itself.

His contention is not that "thought," in the scholastic sense, has ontological validity, but that fact, reality is significant. Even, then, if it were shown that Hegel is pretty much all wrong as to the special meanings which he finds to make up the significance of reality, his main principle would be unimpeached until it were shown that fact has not a systematic, or interconnected, meaning, but is a mere hodgepodge of fragments. Whether the scientific spirit would have any interest in such a hodgepodge may, at least, be questioned.

Having dealt at such length with the first reason why as yet the "transcendental" movement has found no overt coalescence with the scientific, we may deal briefly with the remaining reason.* In the second place, then, the rationality of fact had not been sufficiently realised in detail in the early decades of the century to admit of the principle of the "transcendental" movement being otherwise than misunderstood. That is to say, the development and, more particularly, the application of science to the specific facts of the world was then comparatively rudimentary. On account of this lack of scientific discovery and application, the world presented itself to man's consciousness as a blank, or at least as only stuff *for* meaning, and not as itself significant. The result was that Hegel must be interpreted subjectively. The difficulties in the way of conceiving a world, upon which science had not yet expended its energies in detail, as an organism of significant relations and bearings were so great, that Hegel's attempt to point out these significant types and functions as immanent in reality was inevitably misconstrued as an attempt, on Hegel's part, to prove that a system of purely "subjective" thoughts could somehow be so manipulated as to give objectively valid results.

Hegel, in other words, anticipated somewhat the actual outcome of the scientific movement. However significant fact may be,

*It should be understood that in the previous discussion so far as it relates to Kant, I have taken him at his lowest terms—those of logical self-consistency. So far as Kant does not succeed in freeing himself from his original position—the existence of a formal, or apart, faculty of thought—so far his emphasis of the *a priori* in the sense already attributed to him is inevitable. But that the *tendency* of Kant is to make the thought-relations *a priori* simply in the sense of being fact's own anatomy and physiognomy I should not deny.

however true it may be that an apart faculty of thought is an absurdity, however certain it may be that there are no real types or methods of thought at all excepting those of the object-matter itself as it comes to be understood, yet to man this objective significance cannot be real till he has made it *out* in the details of scientific processes, and *made* it applied science in invention. Hegel's standpoint was, therefore, of necessity obscure. When the significant character of fact was not yet opened up in detail, a method which worked upon the basis that the only possible thought is the reflection of the significance of fact, had no chance of fair interpretation. And thus it was (and largely is) that when Hegel speaks of objective thought and its relations, he is understood as having the ordinary conception of thought (that is, of thought as a purely separate and subjective faculty), and yet as trying to prove that this apart faculty has some mysterious power of evolving truth.

The question which now confronts us, therefore, as to the present place of logic is just this: Has the application of scientific thought to the world of fact gone far enough so that we can speak, without seeming strained, of the rationality of fact? When we speak of the rationality, of the intrinsic meaning of fact, can these terms be understood in their direct and obvious sense, and not in any remote, or *merely* metaphysical sense? Has the theoretical consideration of nature in its detailed study, has practical invention, as the manifestation of the rationality of fact, gone far enough so that this significance has become, or could become with some effort, as real and objective a material of study as are molecules and vibrations?

It seems to me that we are already at this stage, or are at the point of getting to it. Without arguing this question, however, (which, indeed, can be proved only by acting upon it, only *ambulando*,) I would point out that the constant detailed work of science upon the world in theory and in invention, must in time give that world an evident meaning in human consciousness. What prevents scientific men from now realising this fact, is that they are still afraid of certain "transcendent" entities and forces; afraid that if they relax their hostility to metaphysic, some one will spring upon them the old scholastic scheme of external, supernatural unreali-

ties. To those who take the prevailing agnosticism not as a thing, but as a symptom, this agnosticism means just this: The whole set of external, or non-immanent entities, is now on the point of falling away, of dissolving. We got just so far, popularly, as holding that they are unknowable. In other words, they are crowded to the extreme verge. One push more, and off they go. The popular consciousness will hold not only that they are unknowable, but that they are not.

What then? Science freed from its fear of an external and dogmatic metaphysic, will lose its fear of metaphysic. Having unquestioned and free possession of its own domain, that of knowledge and of fact, it will also be free to build up the intrinsic metaphysic of this domain. It will be free to ask after the structure of meanings which makes up the skeleton of this world of knowledge. The moment this point is reached, the speculative critical logic worked out in the development of Kantian ideas, and the positive, specific work of the scientific spirit will be at one. It will be seen that this logic is no revived, redecked scholasticism, but a complete abandonment of scholasticism; that it deals simply with the inner anatomy of the realm of scientific reality, and has simply endeavored, with however much of anticipation, to dissect and lay bare, at large and in general, the features of the same subject-matter, which the positive sciences have been occupying themselves with in particular and in detail.

That we are almost at the point of such conflux, a point where the general, and therefore somewhat abstract lines of critical logic will run in to the particular, and therefore somewhat isolated, lines of positive science, is, in my opinion, the present position of logical theory.

JOHN DEWEY.

WILL AND REASON.

IT has always been, I think, the practice in civilised society to speak of reason or good sense as in some way influencing action. And of course it must do so, if, as we suppose, it forms the radical distinction between man and the lower animals. "Be reasonable," we say, in reference to action no less than to speculation. "Wisdom and blood," says Shakespeare, "combating in so tender a body, we have ten proofs to one that blood hath the victory." Blood here means passion. How does wisdom or knowledge combat passion? I do not say that wisdom and knowledge mean the same thing, but if they do not, we should like to know the difference between them.

In this prevalent notion of the conflict between reason and desire, it may be observed that reason is, as a rule, supposed to be negative or prohibitive. "Be reasonable" generally means "give up something you want very much." According to one account, the inward monitor of Socrates was always negative, and throughout moral philosophy, and especially throughout moralising philosophy, which is not quite the same thing, you find the point of view that reason conflicts with desire, and has in fact for its function very much to prevent you doing or caring about whatever you very particularly want to do or incline to care about. This is what gives rise to the state of things satirised in the old saying "Any young man would rather face an imputation on his moral character than an imputation on his horsemanship." If moral character means a sort of detachment from everything, this feeling is both natural and justifiable. The popular interpretation of Aristotle leans in the direction of this

idea about reason, in so far as the conception of the reason seems to be connected with common-place notions about the evils of excess, strongly represented in Greek proverbial philosophy. It was easy to add to these ideas the conception of the evils of defect, which is little more than a verbal refinement on the other. These quantitative expressions have not much meaning in morality. Unquestionably, I think, the popular aspect of the Aristotelian doctrine is an idea that you ought not to throw yourself very deeply into anything. Reason is, in short, according to these moralistic conceptions, though not according to Aristotle's fundamental view, a sort of check upon desire and little more.

This negative character of reason will, I hope, explain itself away as we proceed. The primary point on which I want to insist is not why reason is thus treated as negative, but how it comes that reason can be supposed to conflict with or control desire at all. I speak for the present of Desire, not of Will, because the meaning of desire is clearer; whereas it is a doubt, until we have explained the nature of active reason, what Will is, and whether it is distinguishable from desire.

Now, on the other hand, there is a sentence of Aristotle "Intelligence as such moves nothing," and this seems to come home to us quite as naturally as the idea that reason controls action. All plain or unambiguous instances of reason or reasoning or intelligence, seem to deal with discovery of fact, couched in a form which is capable of truth and falsehood. For our purpose we may treat it as elaborate perception, whether direct or assisted through inference, such as calculation. Calculation is the old meaning of reasoning, both in Greek and Latin.

How do we get across from perception or calculation to anything that can interfere with desire?

Of course there is a meeting-point in the idea that attends desire. Human desire, at least, is not blind. It is desire of something, which is before the mind as an idea; and in the case of desire which issues in action this something must be mentally specified in respect of the particular means needed to bring it about. And also, the end or purpose which is desired for its own sake, is, in the

connection of cause and effect, itself *de facto* a means to other results *ad infinitum*, more or less of which are foreseen by the person who acts. Thus the act, as fully presented to the mind in idea, is a complication of external circumstances, which are ideally distinguished, supposing the act to be reflected on, as means, realisation of the purpose, and foreseen consequences both of the means and of the realisation of the purpose.

It is, I think, all-important to remember, that these distinctions are distinctions of relation to the acting subject, drawn very lightly by the acting subject on the shifting surface of a complicated set of results presented in idea, and are not at all complete distinctions, and lend themselves very readily to self-deception. We shall see the importance of this remark directly.

In the meantime, here we have one way in which reasonings about fact do help to modify our actions. If we know distinctly what we desire, say, a week's holiday, then it is reasoning about matters of fact that will tell us what we must do to get it, and, in part, what the results will be both of our getting it and of what we do to get it. Now for philosophical purposes we need not consider the foreseen consequences separately. They must rank, morally, as means. That is to say, they are something which you have to take into the bargain in order to get what you want. They come in with all the other circumstances in determining whether you like the action or not.

Now is *this* connection between action and reason what we have in mind when we say that a person ought to act reasonably, or that reason combats desire? Do we understand by acting reasonably, that assuming some one part of the imagined circumstances to represent the purpose, the agent has got all the means to it, and the foreseen consequences of it, and the interdependence of the parts of the purpose itself, set out in a connection which is truly perceived or scientifically inferred?

We do sometimes appear to mean this. We say: it is unreasonable to ask me to be at the station at nine when the train does not start till ten. It is unreasonable, you may say, on the ground that the means demanded of me are not, scientifically speaking, neces-

sary to the end agreed upon. Still more we should pronounce it unreasonable to adopt any means which actually defeats your purpose; which could only happen, one would think, either from moral self-deception, or in complicated matters where the means are disputable. This second case does not matter to us; the first carries us a little further, because it suggests that what you call the means may really contain your purpose, or one of your purposes, perhaps inconsistent with another. The hackneyed example of selfish charity is as good a case of this unreasonableness as can be found. The gift, which is professed to be merely a means to the good of another, is, under all the conditions, a means contrary to that good, and is given because it gratifies an impulse of the donor. It might seem, in this case again, a fair explanation to pronounce such conduct unreasonable merely because the means adopted are scientifically speaking inconsistent with the end proposed. We might bear in mind, however, that we seem to have detected here a probable conflict of ends, not merely of means to an end.

Admitting, then, for the moment, that we hold conduct to be unreasonable if the perception, implied in it, of the relation between means, ends, and consequences is flagrantly false, do we admit conduct to be reasonable *simply* because the intellectual perception in question is clear and true? Taking truth in its ordinary sense, as truth of simple fact, we must deny this. I may know perfectly well that so much wine will make me drunk, and may drink it with that object and with that result, and yet no one will pronounce this a reasonable action, though my judgment of facts and results was as true and reasonable as could be. It may be, however, that in a larger sense true judgment involves reasonable action.

Thus it does not seem that truth of perception or correctness of calculation as to the connection of the circumstances which are presented in the idea of an act are sufficient to make the act reasonable, although serious blunders in the perception or calculation seem to make the act which implies them unreasonable. I even doubt whether the last clause was rightly stated. I was obliged to say *flagrant* errors, *serious* blunders. For it seems doubtful whether a purely intellectual error, or blunder of perception, does make an

act "unreasonable," which owing to such a blunder misses its mark. I incline to think that the reason why we are forced, in such cases as I have instanced, to lay stress on the *flagrancy* of the blunder, is that it makes us suspect self-deception or moral neglect on the part of the agent, makes us suspect, in other words, that the inconsistency between means and ends was not owing to mere intellectual misjudgment, but was adopted with open or partially open eyes. I do not think that I *should* call my friend unreasonable for wanting to meet at the station an hour before the departure of the train, if he could show me *bona fide* grounds which made him imagine that it was necessary to arrive so early. I might in that case think him mistaken, but should not venture to call him unreasonable, unless his mistake seemed so obvious that I thought it was committed on purpose, that is, was not an intellectual mistake at all. When I call him unreasonable, perhaps I really suspect he is making a claim on my time to meet some private convenience of his own—to avoid a crowd or to make sure of some particular carriage, which I do not care about—and therefore perhaps it may after all be his *purpose* that I think unreasonable.

But there is one great doctrine of reasonableness which does reduce it to a question of means and ends, and that is, the doctrine that everything else is a means to pleasure, whether that of the agent or that of all sentient beings. I do not want to discuss Hedonism psychologically just now, I only want to use it as an illustration of one way in which intelligence may be alleged to control action. The ultimate theory would then be that this uniform purpose, pleasure, is a natural or obvious, or, so to speak, a *given* purpose, and that all definite action is or has been prescribed by the intelligence dealing with matter of fact, as a means to the realisation of this given purpose.

Then reasonable action would mean what our reasoning and perceptive powers, dealing with matters of fact, pronounce to make for pleasure, and unreasonable action would be all that does not. Here, though I wish to avoid hackneyed criticism, I must note that there is a certain difficulty in getting across from the idea of one's own pleasure to that of other people's pleasure as a natural pur-

pose, and sometimes we find the contention that any person's pleasure is a *reasonable purpose* to any person, which, like several indications before, takes us out of the connection between reason and the mere calculation of means to an end.

Apart from this, I have, for our object, only to refer back to the suspicion with which we regarded these distinctions between means, ends, and consequences, in the presented idea of an action. The burden of proof lies on those who limit the aspects in and for which activities or results can be or ought to be desired. If we say that the whole complex of our moral life is a means to a partial though necessary incident in it, it seems to me that we are putting the cart before the horse. If you could really say "moral life is the means, and pleasure is the end" then it would follow that, should calculation tell you that moral life was not the most effectual means, you would not prefer it. Now this old argument may be pronounced unfair on the ground that it puts an impossible case; just like the counter-question which is asked by the opposite side, "If morality led only to increased pain, would you prefer it then?" Still, if these two questions together bring out the fact that pleasure is an incident of a whole complex of functions and activities which we cannot suppose to be separated from it, we do get this much result, that there is no firm ground for distinguishing part of the complex as the end from the rest as the means. And it seems clear, also, that we differentiate pleasures *in kind* according to the activities which they accompany, just as we have constantly found that the so-called means differentiates and qualifies the so-called purpose.

Thus I do not think that it is possible to represent the reasonableness of action as consisting in its guidance by right calculation of the means to an end, not even to the alleged simple and universal end of pleasure. At the same time, this view has one essential element of truth, that is the recognition that a positive impulse or claim can only be combated or defeated by a positive impulse or claim. The view goes so far indeed as to say that one form of a general impulse can only be combated by another form of that same impulse through the discrepancy of the alternative means to its at-

tainment. However this may be, so much does seem clear, viz. that reasonableness cannot be, as popular language tends to make it, something purely negative and prohibitive. Its negative aspect must be secondary, and according to the suggestions furnished by the notions we have been examining, must arise out of a discrepancy between two sets of means to the same acknowledged or accepted end. This I think is solid ground, so far that we are bound to deduce the negative side of reasonableness from a positive nature, whether a general relation to one and the same purpose, or relations to different purposes. We have learnt, on the other hand, to distrust the absolute distinction between means and end.

2. Now I turn for a moment to what I may describe as *maxims* of reasonableness. I will not call them "A priori principles," because such an expression raises a question about the nature of experience which does not concern the point before us. But I do treat them as characteristic of a view which explains reasonableness rather by rules than by purposes; and it seems to follow from this that the rule must be alleged to be self-evident, because if they were derivative, they would most naturally be derivative from purposes. But in the history of speculation of course the same principle may be recommended at one time as analogous to an axiom of the reasoning power, and at another time as involved in the purposes which are recognised as good. Even the same writer may combine both views.

Now if such principles are supported as constituting the reasonableness of action, either because connected with the predominance of the speculative intelligence, or because of an analogy between such principles and any axioms acceptable to the speculative intelligence, I believe that this support of them is due to a sheer confusion.

I take two only, as illustrations, one of each type I have mentioned.

Plato, it seems to me, constantly fails to distinguish between the reasonableness of conduct, and the reasonableness of abstract reasoning, that is, of the scientific intellect. To the moral philosopher, scientific or theoretical interest and activity are one interest

and activity among others ; and the reasonableness of activity is not insured by pursuing an activity of reasonableness. It *may* be quite unreasonable, in the moral sense, to pursue abstract reasoning as a vocation in life. When we say that in every man the reason should be uppermost, we do not mean that every man should devote himself to intellectual pursuits. Plato knows this, as, in a sense, he knows everything ; but he uses all arguments for his purpose, and among others I think he allows it to be supposed that occupation with intellectual matter is in a moral sense a predominance of the reason. I may instance his attempt to prove that intellectual pleasures are the pleasantest, more especially with reference to his aim in making the attempt, which is, I suppose, to recommend intellectual occupation as pre-eminently reasonable in the moral sense. To this I say No ; if and in as far as the inference is meant to rest upon an identification of scientific with moral reasonableness, I think it a sheer confusion. It is like saying that because a doctor has to do with the promotion of health, therefore it is a healthy profession to be a doctor. But Plato's argument shows how strongly this idea appealed to him, because he even recommends intellectual pleasures on the score of their sheer pleasantness, implying not only that intellectual occupation is reasonableness in the moral sense, but that intellectual occupation, even when chosen by way of self-indulgence, is still reasonableness in the moral sense. Of course the matter is complicated by a substantive connection, the degree of which is matter of opinion, between the two things, like that between being a physician and leading a healthy life. Intellectual exercise and ambition have a definite influence on certain capacities concerned in the reasonable will. But it cannot be made out, that a tendency to the more intellectual occupations is in itself a tendency to moral reasonableness. Moral reasonableness must be a general characteristic of moral action, not guaranteed by the special content of any form of activity.

Next I have to discuss a principle which is advocated as an expression of the morally reasonable, on the ground of having a sort of analogy to several maxims or axioms of the intellectual world. It used to be said that justice is like a square ; or that the

rightness of an action consists in its conformity to certain eternal proportions impressed upon the world by God. I take one more modern form of these principles as a type of them all. Bentham said, "One is only to count for one," and it is a mere amplification of this when Mr. Sidgwick maintains, if I understand him, that it is objectively reasonable not to prefer my own interest or pleasure simply because it is my own, to that of some one else. This principle seems to me a commendable expression of moral judgment, and I do not think that it is needless or empty. There is a famous passage in *Middlemarch* where the heroine, in a matter which acutely touches her own feelings, thinks to herself, "Now how should I act if I could compel my own pain to be silent, and merely consider what is best for the lives of all the persons concerned in the situation?" That I suppose is a concrete rendering of what this principle means.

But if we look closer, we see its weak side. It is negative, and consequently abstract. You are not to heed your own feelings unless they are such that you would heed them if they were some one's else in the same circumstances. This amounts to no more than saying, "We believe there is always, under all circumstances, a right course." It is strictly parallel to the theoretical principles of Uniformity or Causation. "We believe that there is an explanation for everything; that nothing changes without some reason." These are useful maxims if they make us look for the explanation, and so the other is a useful maxim, if it makes us look for the right course. But it really falls between two stools. It is not capable, as intellectual theorems are, of accurate development and application by measurement and analysis. Yet on the other hand it makes no special appeal to any special content, or tendency of reasonableness embodied in definite ends. It is neither theoretically fertile, nor is it a description of a practical influence.

It is a well-known phenomenon that those who suggest maxims or moral axioms of this kind as defining moral reasonableness are apt to be reduced to assuming a particular impulse, told off to assist or obey the reason. Such are Plato's "Spirited" element in the soul, Kant's reverence, Mr. Sidgwick's general desire to do what is

reasonable. This seems to me to be creating a rule which has no positive content, and therefore has not the character of a human purpose, and then imagining an impulse to obey it the nature of which is not accounted for in reference to any plan of life, but must simply be propounded as an isolated fact.

It kept suggesting itself to us above that reasonableness could not be thoroughly explained on the basis of a distinction between means and end, because actual ends are not simple and uniform, but are obviously qualified by the so-called means, or context of circumstance. We agreed, however, that what is reasonable must be so in virtue of a positive content, whether as means or perhaps as end, and that its negative or prohibitive aspect must arise from the conflict of two such positive contents.

We have in this section looked at two interpretations of moral reasonableness apparently suggested by analogies with intellectual reasonings or principles, and we could not deny that each of them had a certain appearance of truth, but one seemed to confuse the content with the form, the other to consist of a form without any content.

3. It suggests itself therefore that moral reasonableness must be a characteristic which we ascribe to purposes of action. Then we get a variety of positive content, without relying on the distinction between means and end; while the abstract principles which we feel to be reasonable fall into their right place as very general descriptions of a purpose or scheme of life which can be called reasonable.

But the idea of a reasonable purpose requires explanation.

First, it is irreconcilable with abstract Hedonism. You cannot have any relations within a single and uniform purpose, and reason always involves relations.

Secondly, it is not the most intellectual purpose, the purpose that has most to do with reasoning. I have tried to explain this above.

Thirdly, it is such a life or purpose as possesses a self-consistent relation of the parts to the whole. This is the general characteristic of any reasonable totality *qua* reasonable, and it is this which

forms the general characteristic of reasonable purpose *qua* reasonable.

Then what is the meaning of the self-consistent relation of parts to the whole in the case of a human scheme of life?

We cannot demand that our specific purposes should be related consciously to the purpose of the universe ; because the universe as a whole is the object of theoretical knowledge only, and this does not furnish us with the idea of a concrete purpose at all. It seems then that the whole, by consistency with which human purpose is or is not reasonable, must be the whole of existing human purpose, taken of course as moving in a certain direction, owing to the modification continually introduced through the progressive realisation of purposes. I do not see that more than this can be said without entering upon the analysis of the actual structure of the moral world, of society and of history. What is important seems to me to be that we cannot construct the reasonable world of morality from a theoretical view of men in general and of nature. We have to take it as it is, and are then perhaps able to show that it is an organised movement in the direction of self-consistency of purpose.

Is there not more than one kind or type of self-consistency possible, as when self-indulgence is restricted simply within the bounds of health and decency ? This is the question whether consistency demands completeness, i. e. whether mere omission destroys consistency. It has often been discussed, and I suppose the general answer is that *assuming the unity of the total moral movement*, any elements omitted in any portion of the movement must ultimately have their revenge by producing disturbance.

Then if we ask what after all is the relation of the theoretical reason to the reasonable will or moral reason, the only answer seems to be that the moral reason, in the individual or in the race, is the body of intellectual ideas which are in fact predominant as purposes in either, having become predominant by the power they have shown of crushing out or adjusting to themselves the active associations of all other ideas. And the power is what might be described as logical power ; that is to say it depends on the range

and depth which enables one idea to include in itself as in a system a great variety of minor purposes.

The intellect as such is for morality in the first instance simply the medium in which the moral world or content of the moral world exists ; and which therefore conveys to that content its own peculiar character of system and totality. Then, further, in theoretical reflection on the moral world, I imagine that we notice this predominance of ideas which have organising power, and we frame to express this predominance such predicates as important, right, good. And the whole of these judgments we must call wisdom as opposed to knowledge. But I cannot myself see how these or any judgments can be judgments of the moral reason. They seem to me to be, as judgments, necessarily judgments of the theoretic reason dealing with the facts of the moral world. But then there is the further complication that these judgments themselves, forming the content of intellectual ideas, may, if they have organising power, become actively predominant, and then again they will form a portion of the actual moral world as general ideas or clues, inciting to the active search for concrete ideas which are concordant with them. In this case they are not acting *as* judgments, which are true and false, but only as dominant contents. It is one thing to judge that there is a right in the moral world, and another thing to be mastered by the right in one's own mind.

If I am asked, what I mean by the predominance of dominant ideas, which I allege to form the content of the reasonable will, I start from the position that every idea would produce action if unchecked, simply by suggestions which through associative reproductions call up the necessary movement. Desire may, I believe, or may not intervene, as a state of tension between a pain of want and a pleasure produced by an idea. All that is essential, it appears to me, is this idea which can suggest an action.

In the formed life of a civilised man the organising ideas have long asserted their predominant power, and in every moment crush out countless intruders each of which has in itself suggestions quite capable of leading to action. In childhood or insanity the yielding to every suggestion is a mark of what is called absence or loss of

will; that is, not the loss of a *general* power to check minor suggestions, but of perfectly *definite* habitual purposes which check them as a matter of course.

This view sounds no doubt like an iron Determinism, and I am not much concerned to defend it from that imputation. After all, if we are determined by the content of our own minds, why then I suppose we determine ourselves. And trivial examples of indifferent alternatives such as "I can blow out this candle or not as I please" seem to me very poor representatives of the moral will, compared with the necessary pressure of an over-mastering idea which drives the man up to the point of saying, "This is what must be decisive with one like me, and I have no alternative." We feel, as we say, that "we shall have to do it." Almost all really serious action, it seems to me, is of this type. And if I have read at all correctly this lesson of the new psychology which owes its origin largely to Herbert, it is an instructive meeting of extremes, that the most analytic of psychologies should more than ever represent the individual as the incarnation of a progressive order in ideas.

B. BOSANQUET.

ETHNOLOGICAL JURISPRUDENCE.*

THERE is in the history of jurisprudence no more significant event than the foundation of the historical school by Gustav Hugo and Carl von Savigny. Jurisprudence, up to that time, was not a science, at least not a science in the modern acceptance of the term. It was an art, which the practical lawyer learned and employed in strict conformity with practical traditions, without reflecting on the reasons in virtue of which a legal norm or a social institution existed. The only part of jurisprudence of a scientific tendency was the philosophy of law. This latter branch had, since Hugo Grotius, emancipated itself from the church, but it had advanced no farther than to substitute for the will of God, to which formerly right and wrong had been traced, the principle of human nature, and to found upon the social instincts of man a system of natural law,—an ideal jurisprudential state by reference to which positive laws were tested in respect of their conformity with the ideally right and the ideally wrong. This fundamental conception of the essential character of law was only slightly modified by the substitution of the human reason for human nature. The rational systems of jurisprudence also derived the state and the law from the individuality of man, especially from the social traits of this individuality, and definite notions and principles were thus enunciated from which state and law were deductively constructed.

The historical school first introduced a change in all this. It afforded the legal practitioner the possibility of seeing that the law

*Translated from the manuscript of Dr. Albert Hermann Post by Thomas J McCormack.

which he applied was the slowly ripened product of a course of development that extended over many centuries, and it afforded the philosophical juristic inquirer the possibility of understanding, that the law was not founded on immutable ideas and principles, but that it was a product of the creative mind of a nation, that this product was subjected to processes of transformation and development, and did not admit of regulation by the individual reason of a single philosophical inquirer. But while the history of law has become a universally recognised discipline in the science of jurisprudence, the application of its underlying principles to the philosophy of law has as yet by no means been universally carried out. On the contrary, the reason still plays an extensive rôle as foundation and evolutionary principle; and to a great extent the history of law and the philosophy of law still pursue their solitary ways as independent branches of knowledge.

In recent times, through the influence of ethnology, jurisprudence has entered on a new epoch. A new branch of the science of law has arisen in Europe, the so-called ethnological jurisprudence, and has already found in Germany, Austria, Italy, France, Belgium, and Holland, enthusiastic supporters. Ethnology, as it is known, is the science that has for the subject of its investigations the totality of phenomena of social life of all the peoples of the earth, and which makes use, in this investigation, of the methods of inductive inquiry exclusively employed by physical and natural science. After the science of ethnology had advanced to a certain point, the extension of ethnological inquiry to the domain of jurisprudence followed as of course.

To a certain extent the investigations of the history of law had prepared the way for ethnological jurisprudence. The inductive method was common to both. The idea of a history of the development of law was no longer strange to jurisprudence. Only the courage was wanting to allow the eye to range over the legal systems of all the peoples of the globe, instead of, as before, restricting it to very narrow limits. The historical investigation of law began in Europe with the history of the Roman law. Thereupon it was immediately extended to the Germanic laws of Europe, so

that now all West-European peoples possess a highly developed history of law of their own. Recently, also, the history of Slavonic law has been assiduously treated.

Whereas in every case here it was a question of the sources of the laws that stood in immediate historical connection with the prevailing systems of Europe, jurisprudential investigation was slowly extended to more remote ethnical fields. The first impulse in this direction came from comparative philology. This science had succeeded in tracing the languages of extended groups of peoples back to common primitive tongues. Among these primitive tongues the Aryan, the common original language of the Indo-Germanic group of nations, first occupied the attention of inquirers, and the law of this group of nations thus became the first object of investigation of a comparative jurisprudence extending beyond the more restricted provinces of the history of law. The provinces of Græco-Italic, Germanic, Slavic, Celtic, Iranian, and Indian law were investigated with respect to a common origin, and various agreements and various deviations were discovered. In very recent times the laws of the Armenians and the Ossetes in the Caucasus have been added to the laws of the Aryans, and the laws of the Afghans will probably soon follow these.

A number of more remote provinces of law have also been entered upon, in connection with theological, philological, and connate inquiries. Thus, particularly, in connection with biblical investigation the Israelitic law, in connection with the study of Arabic the Islamitic, in connection with the decipherment of the hieroglyphic writings the Old-Egyptian, in connection with the decipherment of the cuneiform inscriptions the Sumerian and the Assyrian-Babylonian, and in connection with sinology the law of China. In very recent times the Japanese law has also been treated.

In the laws of all these peoples, by the side of many peculiarities, were also found many phenomena of frequent and universal recurrence.

After the science of law had so far extended its activity in this direction, it was a final step only that ethnological jurisprudence took when it declared that the subject of juristic science was the

investigation of the laws of *all* the peoples of the earth. And yet this step was perhaps a more important one than all that had hitherto been taken. For a considerable group of peoples had up to then been entirely neglected by the science of law, namely the uncivilised peoples, the so-called primitive peoples or *Naturvölker*. And just the laws of these savages furnished the most remarkable disclosures. They exhibited everywhere the most singular parallel phenomena, and made it possible to open up a complete early history of the law, and to bring to light periods of jural development of which the history of civilised peoples has preserved but a few unintelligible remains. Ethnological jurisprudence is thus able to supply complementary information at a point where the threads of the history of law are lost in the obscurity of early times.

The condition of jural life in these primitive periods is very singular. No juristic philosopher has ever lighted on the idea that primitive man could exist with such jural conceptions as he actually does. That which ethnological jurisprudence has brought to light in this connection is something absolutely new and astonishing, something that no brooding brain could have ever developed out of any idea or principle. Indeed, it is so strange that it could not be conceived at all if we did not have it before our eyes to-day among savage tribes.

The collecting of the laws of uncivilised peoples constitutes an independent task of ethnological jurisprudence. In this way the latter science will fill up the gaps which historical jurisprudential inquiry left open in our knowledge of the jural life of man. But more important than all, perhaps, will ethnological jurisprudence become for the future development of the philosophy of law. In this connection it goes hand in hand with the sociological tendency which dominates our time and has its surest foundation in ethnology.

The prime significance of ethnological jurisprudence lies in the fact that it is an ethnological science.

At first ethnology was a purely empirical science. It gathered together all the attainable phenomena of ethnic existence, and separately, at first, among single peoples and tribes. After an extensive

store of material had accumulated in this manner, the discovery was made that in many provinces of ethno-social life, especially in the provinces of religion, law, and morals, especially also in all provinces of social custom, phenomena of essentially similar character presented themselves among a great number of peoples in the case of whom neither any original tribal relationship nor any infusion from one nation into the other could be assumed; and, curious to say, these were frequently the most singular phenomena, of which one would have thought at first that they had sprung from the individuality of a determinate people. This discovery of universal ethnographic parallels was all the more surprising in view of the fact that historical special inquiry, whose province up to then had been essentially national life, had placed especial emphasis on outwardly prominent events occurring in a different form in every nation, whereas phenomena that appeared uniformly among the different nations were little noticed. People had therefore grown accustomed to regard every nation as something existing by itself and peculiar to itself, and, particularly, had also declared it as inadmissible to employ phenomena of the life of one nation to explain corresponding phenomena of the life of another nation.

The discovery of ethnographical parallels led to wholly different ideas. It became clear that a great portion of human ethnical existence was not founded in the peculiar character of particular peoples, but in the character of the human race, in the universal nature of man. And it became in addition clear that that which repeated itself everywhere on the earth, which was therefore an expression of the universal human, was something entirely different from that which previous philosophy had declared to be the actual human. It also became clear, at the same time, that the nations thought quite differently from what the individual man did. With this, however, the foundation of the entire previous philosophy was shaken. If the axiom of modern ethnology is correct, namely that it is not *we* that think, but *it* that *thinks in us*,* we shall no longer be able to explain our nature from our consciousness, from our ego, from our

* Bastian.

reason, but we shall have to pursue this momentous "It" that thinks in us, and since we cannot find it *in* us we shall have to search for it *outside of* us in the expressions of the human soul in the life of the race.

This is the fundamental idea of modern ethnology. It seeks to collect all the expressions of the human soul in the life of the species, and from them to derive its inferences as to the nature of man. It regards ethnic existence as the precipitate of human psychical existence, and not merely of that part of it which is conscious, but also of that part of it which is unconscious, that which is inaccessible to introspective observation, that which is not thought, but is merely lived. It enlarges accordingly the domain of psychology, which was restricted hitherto to the analysis of the human consciousness, by the incorporation of an additional domain unmeasured in extent.

These general conceptions of ethnology are also determinative for the science of ethnological jurisprudence, and from this results its peculiarity as contrasted with the other branches of juristic knowledge.

Ethnological jurisprudence places the centre of gravity of the science of law not like the previous juristic philosophy in the individual jural consciousness, but in the law viewed as a province of ethnic existence. It regards the laws of the nations as the precipitates of that which is now active and has been active as jural instinct in the entire human race. It assumes that when all the phenomena of law in the life of the nations have been fixed, an infinitely more valuable material will be drawn therefrom adapted to the disclosure of the nature of law than could have ever in the world been acquired by an analysis of the individual jural consciousness. It does not regard the individual jural consciousness as something innate in man and exempt from the altering effects of time, but as a product of the social conditions in which the individual has grown up. It assumes, therefore, that the individual jural consciousness changes with a change of the social conditions, so that a man who grows up under different social conditions possesses a different jural perception. This assumption, if we compare the expressions of the jural

consciousness of races low in the scale of culture with those of civilised peoples, is one that cannot be escaped. We have only to recall to mind the irresistible force with which the jural sense of peoples that live under clan-constitutions demand vengeance of blood, whereas this species of retaliation no longer exists in our jural consciousness of to-day. Thus there are hundreds and thousands of jural instincts and conceptions which are present at certain stages of civilisation and disappear entirely at others.

Ethnological jurisprudence therefore assumes, that the juristic philosopher who lays at the foundation of his system essentially his own jural consciousness, simply enunciates therewith a system of law that answers perhaps to the current conceptions of his time and his people, but which can in no sense lay claim to a value beyond that.

Quite different, on the other hand, are matters conditioned when the inquirer has before him the laws of all the peoples of the earth from the lowest to the highest. Here he has in his possession a picture of the jural consciousness of the mind of humanity, which is no longer subject to alteration, but which, to the extent that the development of human jural life has advanced, is complete.

For the execution of its task ethnological jurisprudence first requires a collection of the laws of all the peoples of the earth. Each one of these laws is of equal value to ethnological jurisprudence in so far as the jural consciousness of humanity has found expression in it in any form. Especially deserving of consideration are the laws of the so-called savage peoples that have been so much neglected and condemned hitherto; since they bring to light the jural consciousness of humanity in its germinal stages, and since higher formations are invariably best understood when we know their first beginnings.

The solidest basis for ethnological jurisprudence would be furnished by a monographic treatment of the law of every single tribe and people of the earth. By such monographic treatments the entire social organisation of a given tribe or people would be exhibited in all its complicated reciprocal relations, and we should be able to follow the law in all the thousands of minute ramifications that con-

nect it with the remaining provinces of national life. But such a monographic treatment of the law of all the nations of the earth is accompanied with great difficulties, and this part of the task of the science of law has as yet been undertaken only to a limited extent.

The condition of affairs is best in this respect where the nations themselves have collected and compiled their legal customs in books of laws. But such collections are found only among peoples that deserve to some extent the appellation of civilised peoples. Among the great majority of peoples the law is simply practised and handed down by oral tradition, so that here the legal customs must be collected by members of foreign civilised nations,—a very difficult labor and one that can be accomplished only by persons who take up their abode permanently among the races in question and become thoroughly familiar with their language and habits of life.

Collections of this character we possess unfortunately only to a very limited extent, and our knowledge accordingly of the law of uncivilised peoples is still very meagre. Even the books of law possessed by the various peoples have not all been made available to juristic science. In part they have not yet been printed, and in part they have not yet been translated into a generally understood language. Considerable time will yet be required before the existing material has been made wholly accessible.

Not before the legal customs of all the peoples of the earth have been collected will ethnological jurisprudence be in a position to furnish a successful solution of the task it has set itself,—the task namely of a causal analysis of all the phenomena of the jural life of the human race. Yet to a certain extent this task may be undertaken at present, even with a relatively limited store of material.

The starting-point for the ethno-juristic investigation of the phenomena of jural life is furnished by the ethno-juristic parallels, legal customs that are found uniformly appearing among the nations, without there being any reason to assume that one nation has received them from another. Legal customs of this character are in part so universally diffused over the earth that they may be characterised as a common possession of mankind; in part they appear sporadically among unrelated peoples; in part they are restricted

to more limited domains. The most important legal customs are those that have universal dissemination ; for here it may be assumed that they are a necessary emanation of the social side of human life. Legal customs that occur only sporadically, but appear uniformly among unrelated peoples, must likewise be regarded as the products of the universal nature of man, yet only as such that *can* arise under definite conditions of existence. Legal customs that occur only in limited ethnological domains will have to be referred to the peculiar character of definite peoples and tribes. Legal institutions of universal character are, for example, the forms of marriage by capture and purchase of the bride, blood-vengeance, the right of refuge, the systems of composition, ordeals, oaths, and so forth. Almost universal are the levirate, and the betrothal of children. Sporadically among unrelated peoples appear : the seizure of the corpse of the debtor for debt ; execution by fasting, whereby the creditor brings pressure to bear upon his debtor by having him fast a definite period of time before his dwelling ; the custom of the chief doing combat with his grown up son, to whom the command of the tribe passes if he conquers his father ; and so forth.* Frequently it is the most curious customs that thus recur, among peoples that are completely separated from each other by oceans and inaccessible mountain ranges and have unquestionably never been in communication with each other.

The explanation of these ethno-juristic parallel phenomena is in part not very difficult, inasmuch as many of them can be traced back to fixed forms of social organisation. Thus, for example, a whole group of universally recurring legal customs is associated with the peculiar formation of the clan-constitutions and clan-law which regularly appears among uncivilised peoples and characteristically differs from the form of political organisation familiar to the present age. Many legal customs are also based on religious conceptions and social customs, and their explication in such cases is frequently very difficult.

* The reader will find a brief survey of the ethno-juristic parallels appearing among the various peoples of the earth, in a treatise of mine entitled *Ueber die Aufgaben einer allgemeinen Rechtswissenschaft* (1891), pp. 27 to 72.

A complete explanation of all the legal customs of all the peoples of the earth with respect to their social causes would exhaust the work of ethnological jurisprudence as an ethnological discipline. But in the same way that the acquisitions of ethnology are in their turn utilisable towards the constitution of a universal philosophy, to which they will impart perhaps an entirely different character, so will the results of ethnological jurisprudence be in their turn utilisable towards the constitution of a universal science of law and for the philosophy of law, in which probably, through its means also, a powerful change will be inaugurated. These are the ideas, traced in their most general characters, that may be regarded as the fundamental ones in "ethnological jurisprudence."

ALBERT HERMANN POST.

AMERICAN POLITICS.

NOTHING in this country appears to the stranger more intricate and inexplicable than our politics. The different parties, two big ones and several little ones, the various machines, county, state, and national, the "bosses," "heelers," and "workers" present such a confusion of ideas and a terminology so varied, that it is only after many years that the foreigner begins to comprehend our system of government and the principles underlying our political movements. Indeed, the majority of Americans themselves are no better off and have no clear perception of the part they are playing in the administration of affairs or the ethical effects of the ballot which they cast. Ask the ordinary voter why he supports the candidates of a certain party and you will find that his reasons are reducible to a few concrete facts, and are rarely governed by any general principles.

In the Southern states the vast majority of the whites are democrats through opposition to the republican party which fought the war and deprived them of their slaves. The negroes on the other hand are republicans because it is to that party they owe their freedom, and from it they expect protection for themselves in the exercise of their political rights and the blessings of opportunity for education. The political question there becomes a race question, utterly regardless of the principles which the two great parties represent. Let there be a complete change of platforms and the result would be precisely the same as it has been for the past generation—the South would still remain democratic, and the votes of their presidential electors would still be cast for the candidates of that party.

There is a minor race question in the feeling against foreigners, more especially Irish, Italians, and Germans, influenced to some extent by the fact that a large number of these foreigners are Roman Catholics and that there is an uneasy suspicion on the part of some Americans that the Catholic church is hostile to the spirit of democracy, a suspicion not entirely unfounded if one should judge solely by the sayings and doings of some of the prelates of that church for the past forty years. This "Know-nothing" sentiment at one time threatened to create a solid foreign vote in opposition. Germans and Irish united under the protecting wings of Tammany Hall and, aided by clergymen who hoped to obtain part of the state educational fund for their private parochial schools, formed a strong ally to the national democratic party. Happily prejudices of race and religion are dying out and neither party can now claim a monopoly of the foreign vote. Strange as it may seem, however, the Irish and German elements, so recently the objects of proscription themselves, have in late years become embittered against the Chinese. To the patient industry of the Mongolian immigrants is due the building of the Pacific railroads, when it would have been impossible to obtain white labor, and the cultivation and development of the Pacific coast states. Congress was terrorised into passing the law excluding all Chinese laborers. It was more than race prejudice which contributed to this hatred of the Chinese. The chief reason for Chinese exclusion was an economic one. Great masses of laborers feared that the Chinese by immigrating in vast numbers would deprive them of work by taking their places at lower wages, and, having the ballot, they dictated to Congress the terms of the Anti-Chinese Act.

The alien contract labor law is a measure conceived in the same spirit and directed against the hiring of laborers abroad by American contractors, who could thus displace their employes at lower wages by Hungarians, or Poles, or Russians, ignorant of the language of this country and whose compensation could be the more easily reduced to a bare maintenance, and who in sickness or old age could be turned out on the roads to die without costing the contractor any contraction of his bank account. There was some excuse for this

law, or at least for the feeling which prompted it, when the miners of a whole section could be evicted and they and their families made to suffer the pangs of slow starvation because the owners of the coal lands found they could obtain human machines at a less cost from abroad. It was natural that the laborers should demand a law which offered some immediate relief even at the risk of meeting wrong with wrong, rather than that they should attempt to regulate affairs on abstract principles of justice while their stomachs were empty and their wives and children were dying for want of sufficient nourishment. That feeling, however, is also vanishing and American workingmen are beginning to see that the increase in population, native-born as well as that imported by contract, is steadily adding to the number of competitors and lowering the rate of wages. Their attention is becoming more and more directed to the opening of new opportunities for work rather than to the restricting of the number of workers.

Another class of men, if they vote at all, do so on no general principle of public welfare, but solely for their own advantage at the expense of their fellow men. These are to be found among the rich manufacturers, the coal, and iron, and railway kings, and the manipulators of the crops of the nation. Rarely casting a ballot in person, they give notice to their thousands of employes that if the latter do not support the candidates or the party which they happen to favor, the employes' places will be given to more pliant servants. These men are as non-partisan as the most ardent reformer could wish. One of them, a few years ago when questioned by an investigating committee of the New York state legislature, said: "In a republican district I was a strong republican; in a democratic district I was democratic; and in doubtful districts I was doubtful, but in politics I was an Erie railroad man every time." Another famous man of the same type said he had no politics; that he found it cheaper to buy up one set of legislators after they were elected than to purchase two sets of candidates before election. These corrupt men, counting their wealth by tens of millions, influencing state legislatures and the national Congress, and throwing their weight into Presidential campaigns, constitute the chief "dangerous class"

in the United States to-day, far more threatening to the permanency of free institutions than the anarchists who were hanged at Chicago.

Then there are the illy-paid employés of these men who do their bidding at the polls, voting for the candidates of their masters. Promise of office or patronage lures others into the support of one party or the other. Lastly come the poorest of the poor who live in the most miserable tenement houses, or when single live in the big lodging-houses which are found chiefly in New York and Chicago. A ton of coal or a barrel of flour is the bribe to the former, frequently effected through the medium of the poor wretch's wife who does not care for politics but sees a very material advantage in the food or fuel offered by the ward worker. The lodging-house voters, paid by drinks of whiskey or dollar bills, until recently in New York were marshalled in squads of twenty or thirty early on the morning of election day, given their ballots and compelled to hold them aloft between the thumb and forefinger of the right hand so that the heeler or paid servant of some political faction might watch them from the moment they took their place in the line of voters until their ballots were handed to the election inspectors and dropped in the box. Both parties wink at such frauds and their henchmen directly countenance and assist in them but the party that happens to be in the majority in any locality is usually the one most guilty. The result is that the minority affects great virtue and loudly denounces the corruption of its opponents.

Among those who do vote on principle are the prohibitionists, the greenbackers, the adherents of ephemeral labor parties and the socialists. The anarchists generally refrain from voting because they do not believe in any government by force and say that an enlightened public opinion will lead the people to dispense with such things as the army and navy and police and law courts. The socialists occasionally vote for the men of other parties whom they think represent the worst measures, in order the sooner, as they frankly avow, to produce revolutionary conditions, which they expect would assist them greatly in their propaganda. The prohibitionists, greenbackers, and labor men each take a partial view of political economy. The first see the evils and degradation arising from

intemperance and think that everything else must yield to the one consideration of the abolition of the liquor traffic. The panacea of the greenbackers consists in the destruction of the monopoly of the currency now enjoyed by the national banks. The labor men have different shibboleths at different times such as the prevention of child labor in factories, an eight-hour work-day and the like—measures which might effect some relief but are minor matters compared with the great social problem of the increase of poverty in the midst of the greatest productive energies which the world has ever seen, a problem which is rapidly coming to the front and overshadowing all others.

But these minor movements hardly produce a ripple on the surface of our political waters. There are only two parties worthy of the name in the United States to-day, as there have been but two ever since the days of Thomas Jefferson and Alexander Hamilton. These parties go on forming platforms chiefly on the theory of offending the least number of voters and phrasing their declarations in vague terms which may be explained one way in one part of the country and another way in another part. Such is a cursory view of the field of American politics to-day.

It may seem that I have made out a pretty bad indictment of corruption against our politics and that the view of the cynic is correct that American politics are desperately wicked and there is no health in them. But the moral forces which are operating in the world are fortunately not dependent upon the changeable methods or the selfish objects of men. It is here in America, perhaps more than anywhere else, that the natural laws of social development have fullest play. It is here that the evolution of politics is working itself out freely, untrammelled by tradition or custom. It is here that the ultimate ideal of politics will first be reached. When the framers of the Declaration of Independence formulated their proposition that governments derive their just powers from the consent of the governed, a step in the right direction was taken—a step that was in accordance with our old Saxon traditions, yet for the first time in the world's history made on an extended scale, to base human government on the principles of natural law. And through all the vicissi-

tudes of our country, its struggle for independence, its war for the liberation of its commerce, its civil conflict which would have dismembered any other nation, or would have left one section the subjugated serfs of the other, through a disputed presidential election which strained the written constitution to its utmost, the great moral force of natural law has been working, now through one party, now through another, gathering impetus as it goes and giving promise always of better times to come.

It is in this broad view that all the petty thieveries and striving for place and power sink into utter insignificance. The people do still rule. They may sleep for a time but are sure, sooner or later, to assert their rights in accordance with the instincts of the human mind, which are good and not bad. As long as the suffrage shall exist it is reasonably certain that this American government, "of the people, by the people, for the people," shall not perish from the earth. If the wealthy monopolists could control the suffrage, the prospects might be different. The freedom of the voter has been impaired to a certain extent but the American people with quick instincts have awakened to the danger. The Australian system of voting, which secures secrecy and freedom from intimidation and almost extinguishes bribery is now becoming very popular. Fifteen of the states have adopted it and the other twenty-nine will, no doubt, follow their example in a few years. But the introduction of measures for its establishment presented the curious anomaly of being opposed by democrats in some localities and by republicans in others, both for partisan reasons, constitutional and high moral pretexts being of course advanced. When it becomes the general law, it will do more than anything else to purify electoral methods.

Entirely above the question of methods, however, there are certain principles involved in American politics which it becomes of the highest importance to comprehend and which furnish the key to the apparently inexplicable confusion. These principles, it seems to me, are reducible to two, which may be likened to the centripetal and centrifugal forces in nature. As both are needed for the stability of the physical universe, so both the centralising and decentralising tendencies in politics are necessary for the co-ordination of the state.

It is in the free play of these forces, each in its proper sphere, that lies the assurance of the perpetuity of American institutions. But as the ideal has not yet been reached, the practical result is that one tendency begins to act, at first legitimately, then from the aggrandisement of power and the "cohesive force of public plunder" the administrators of government attempt to stretch it unduly, the opposition comes to power and the same story is repeated. In each case the liberal party succeeds the conservative, acts at first wisely, then corrupted by the subtle temptations of place and power, and wishing to retain both, it becomes opposed to change and begets a new conservatism, while new liberals arise on a higher plane of evolution to continue the never-ending struggle. And it must be recollected that the conservative party of each generation is far more liberal than the one which it displaced, thus giving assurance of perpetual progress.

This has been the epitome of all American history; each party government, by whatever name it may have been known, has been liberal in comparison with its predecessor and conservative as to its successor. When Washington organised his administration it was no doubt regarded in Europe as highly revolutionary and anarchistic. But such a class government, with laws of entail and slavery, and cruel punishments for petty offences, as existed then, would not be tolerated for a single year at the present time. Thomas Jefferson who founded the democratic party, then called the republican, was a consistent opponent of aristocracy and personally was a man far in advance of his time, but most of his followers would be horrified if they should now come back to earth and see the powers possessed by the general government to-day, necessary, legitimate powers, without which the affairs of the nation could not be administered for a single week. The United States soon got rid of laws of entail and the established churches. The democracy came to power and held it nearly sixty years. Long continuance in office endeared its possession to that party while the very growth of the nation, from five millions to thirty-one millions, demanded changes in internal policy which were not forthcoming. There were not lacking signs of popular discontent. In 1840 the democrats met their first defeat, and for

three or four presidential terms the votes vibrated between the democrats and the whigs. But the latter were not united on a consistent policy. They needed a principle. The principle was shaping itself. Slavery, which had been abolished in the Northern states, was gradually strengthening in the South. The democrats forgot, or rather most of them never learned, that true democracy knows no distinction of color. The abolitionists were denounced by press and pulpit as socialists, as the disturbers of public order, as blasphemers against the very law of God contained in Holy Writ. The people, however, returned to power these same socialists and the institution of chattel slavery was doomed. That would have been the case in any event, but the civil war precipitated it, just as many other unjust wars in history have resulted in disestablishing the very institutions to perpetuate which the wars were made.

The republican party grandly and patriotically fulfilled its mission. By degrees, however, the enormous destruction of wealth during the war and the heavy debt entailed by it, created a burdensome system of taxation which substituted self-interest for patriotism. Duties were laid upon imports from abroad heavier than those which formed one of the chief causes for the revolt of the colonies against Great Britain. These duties enabled American manufacturers to make on American soil the same class of goods that were imported and charge the same price as the imported goods enhanced by the duty, of course pocketing for themselves the extra profit which the tariff aided them to obtain from consumers. The quickest way to wealth was to start some manufacture, get the government to put a tax on similar articles imported and pocket the difference, or to get an internal revenue measure passed taxing a certain line of domestic goods, pay the tax in the first instance and then charge it to the consumers with of course a good commission added for patriotic services. As long as the government had work for every man who could shoulder a musket, the pernicious effect of the system was not clearly seen. But when the war was over and one million men returned to productive avocations, wages began to fall. Then the question of taxation inevitably came to the front and has now become the living issue of the hour. The needle of the suffrage is again vibrating, the

republican party has been deprived of power for four years and the democratic President emphasised the issue by pushing the question of tariff reform to the foreground. His re-election was defeated, but the question is debated with more vigor than ever, and all signs point to absolute free trade as one of the certainties of the future. Judging from the last Congressional elections, the people have at last turned their faces in the right direction.

It will be noticed that two elements, which I have called the centripetal and the centrifugal, have been predominant in shaping American politics. They may be termed the socialistic and the anarchistic forces. Socialism claims the direction of everything by a strong centralised government. Anarchists say with the democrats, "That government is best which governs least," and logically argue for the abolition of all government. Now, the right or wrong of these principles depends upon their application. Only the most rabid anarchist would object to the Post Office, for instance, and few socialists would claim that the state has a right to regulate a man's clothing or his religion. It is on the question as to what subjects these principles should be applied that all our American parties arise. The early federalists were socialistic in that they believed in a strong central government and in relegating as few things as possible to the states. President Jefferson introduced the anarchistic or centrifugal principle of decentralisation and individualism. But as the nation grew, it was seen that this wrought injustice, especially in the matter of slavery which was a violation of human rights, however the different states might regard it. Then the socialistic or centripetal principle began to act and slavery disappeared. Now it seems likely that the individualistic principle will again become dominant in an attempt to abolish all fiscal restrictions upon trade. After this may follow the socialistic principle of state ownership of railways and telegraphs. Perhaps this will be the work of the new political forces evidently gathering, as foreshadowed by the Farmers' Alliance, after the breaking-up of parties and after the democrats, having given us free trade, will have resumed their natural position of conservatives. Then, in the remoter future, may come the anarchistic principle of the removal of the restrictions against female suffrage. And so it will go on, first one

principle acting and fulfilling its mission, then the other, each bringing the nation to a higher plane of progress and uniting it more and more closely with the grand upward march of the human race.

What is this, after all? It is not socialism. It is not anarchy. It is neither democracy nor republicanism. It is EVOLUTION. It does not depend on the temporary success of party governments for its action. It does not even solely result from our unique position or our independence wrested from Great Britain. Back of it lie the broad principles of British liberty, of common law, of Magna Charta won from King John on the plains of Runnymede. Back of it is the great wave of democracy arising out of the darkness of the Middle Ages. Back of it are the injunctions of Him of Galilee who taught the natural law as no man ever taught before. Back of it is Roman jurisprudence and Greek art and culture and the early efforts of the days when Cadmus brought the alphabet to Europe with his Phœnician colony. Indeed, back of it lies the primeval impulse of the first man, God-endowed, ape-descended, who stood upon his feet and began to think. We may carry our thoughts still further to the times when the red sunlight first filtered through the thick clouds upon an uninhabited world, and still further may we go in thought into the ages of eternity, and assert with fullest confidence that the principles of progress to-day working themselves out in politics are but the reflection of the divine ideals founded in the laws of nature.

Can the course of such progress be turned back? Can we despair of the future in the light of all the past? Is not the general movement onward and upward? Will not the sneers at ephemeral phases of our American politics pass away with the incidents which they justly condemn, while the principles of progress remain forever?

THOMAS B. PRESTON.

ARTIFICIAL SELECTION AND THE MARRIAGE PROBLEM.*

BY artificial selection I mean all conscious and purposive arrangements between men and women which have in view character of offspring. This is opposed to natural selection which is merely instinctive unteleological union with one of the opposite sex as impelled by animal passion or romantic love. All sexual union among the lower animals is by natural selection; they do not forecast consequences, and by conforming to known laws determine consequences. Among the lower races of men natural selection is the sole or at least dominant factor in marital matters, but as civilisation advances artificial selection becomes a more and more powerful element. A truly thoughtful and intelligent man in our day in view of marriage will most carefully consider his own life history and that of his parents and ancestors, and also that of his intended partner and her ancestors, as to physical or mental disease, which might be handed down to the issue of the proposed union. He

*In an article in *The Arena* for June, 1890, I endeavored to plainly set forth the renewal of society from its lowest elements as the greatest disease in our social life, and to show that the remedy lies in a thorough application of science to human breeding. Just how this application was to be made I did not state, for I did not include this in the scope of my discussion. Mr. Stead in his *Review of Reviews* for July, 1890, and Mr. Wallace in the September *Fortnightly Review* and October *Popular Science Monthly*, 1890, have drawn inferences on this point which I am not prepared to allow. Mr. Stead speaks in headlines and in text of "murder, mutilation, or imprisonment" as the methods which I hint at, and Mr. Wallace remarks upon my views "that such interference with personal freedom in matters so deeply affecting individual happiness will never be adopted by the majority of any nation, or if adopted would never be submitted to by the minority without a life-and-death struggle." It seems incumbent then on me to state more clearly what I understand by artificial selection, and what forms of it are most expedient at the present time.

would not, for instance, marry into a family which has a tendency to consumption or insanity, for this would be a crime against his possible descendants. Further, this growth of artificial selection with the progress of society is manifest not only as regards individual action but by state regulation. Even in barbarous states it soon becomes evident to the leaders that if strong healthy men are to be had to defend and maintain the nation, strict attention must be paid to the character of those who marry. In Sparta and other ancient states this principle was recognised, and modern governments seek in many more or less indirect ways to encourage marriage between the most fit, so that good citizens and warriors may be raised up to serve the state. All this regulation of marriage by either individual or state action which looks to the character of offspring I term artificial selection.

In the evolution of man as a rational animal artificial selection will more and more prevail, and human breeding will become a well defined art. Man is always artificial,* and it is his goal to become in all his life unnatural and thoroughly artful. There can ultimately be no *laissez-faire* policy as to marriage or any other institution. The history of marriage is the history of the gradual retirement of natural selection; but art has come in here more slowly than in other relations of life owing to tremendous conservatism and the power of human passion. But the time has now come when man must more than ever before attend by artificial selection—that is, purposed care—to the perpetuation of the species in the line of its true advancement, spiritual achievement. I do not now see how the necessity of artificial selection can be gainsaid by any one who takes a broad view of the evolution of the race.

The methods of artificial selection are either negative, which restrain the unfit from propagating, or positive, which encourage the fit to propagate. The most radical negative method is mutilation, and is employed by man with the lower animals and with slaves, but this plan could hardly be used by civilised society

* By artificial I understand not what is unnatural or against nature but that which is after conscious deliberation more in accord with the laws of nature. It is a higher degree of the natural.

for human breeding. Imprisonment temporarily restrains some classes of society from perpetuating themselves. Prevention of conception is at present mostly a voluntary means, but accomplishes the elimination of both fit and unfit. Celibacy of monk and nun, of bachelor and maid, works also in both directions. In many indirect ways society discourages from marriage those whom it supposes to be unfit as tested by wealth, rank, or birth.

It is not, however, so much by the extension of any negative methods, but rather by positive means that artificial selection may be best employed. I will mention three forms by which human breeding might be materially advanced.

By common law and custom the wife surrenders herself physically to submit and morally to obey the husband. This is not for the most part harshly and literally carried out in civilised countries; still there is a vast deal of oppression which is hidden from all eyes, and which is often passively received by women as her rightful lot. This again is a subject upon which delicacy—perhaps unwise—forbids free discussion, but its bearing is manifest. If women have the choice to bear or not to bear, and she with educated conscience choose by fitness of offspring, a large and powerful element of artificial selection may be introduced. Again all governments have laws concerning marriage which act in general toward encouraging the fit. Certain conditions as to age, etc., being fulfilled, the state grants a marriage licence, and public opinion might easily be led to make the requirements more stringent. As a physician has suggested to me a certificate of health from an approved medical examiner might be required of all applicants for legal marriage. This would certainly be a strong measure of artificial selection, and would save much misery springing from ignorance and vice. It surely seems scarcely fitting that those who cannot pass an examination for life insurance freely contract marriage with view to issue.

But the plan of artificial selection which seems to me most feasible at the present time would be voluntary associations of men and women who bind themselves to learn and apply the laws of heredity in their marriage relations, to seek for expert guidance, and in all their life to live not merely purely, but according to reason and

science. Heredity societies of this stamp which should favor marriages only between members would ultimately become a rational aristocracy, and true and good blood would be perpetuated in the best manner. There is much, indeed, to be done in the science of heredity, especially as regards laws of transmission of mental and moral qualities,* but still we have even now a sufficient basis of knowledge to make the experiment well worth trying.

Many objections can be raised to such schemes. For instance, it will be said that they might assure us of obtaining men of talent, but we should forever lose men of genius. If such societies were in vogue in the Elizabethan period, we might never have had a Shakespeare. What likelihood that a scientific expert would advise the marriage of John Shakespeare and Mary Arden! I answer that we should have had a dozen Shakespeares instead of one. The law of the production of geniuses is not beyond human ken. Maud S. is truly a genius in horseflesh, but she came into the world in no fortuitous or instinctive way, but by scientific breeding. The applicability of similar foresight in breeding men would produce geniuses in abundance. It may not be accomplished in an exactly analogous manner, an expert leading around eminent men to "make the season," but the analogous practical results will nevertheless be obtained.

Another objection which might be urged is that any such scheme would seriously diminish population. True; but what thoughtful man applies the numerical test to the progress of the race! It is not quantity of citizens but quality, which constitutes the true greatness of states. The counting of heads instead of what is in heads, is a mistake into which democracies are peculiarly apt to fall. Were all men exactly equal a census would be a true test, but considering the tremendous inequalities in humanity it is sheer folly for a country to glory in the number of its adherents, or a sect in the number of its adherents, or a city in the number of its citizens. Civilisations are weighed down and ultimately crushed by the dead weight of the masses. The barbarian is not without but within the civilisation. By recent inquiries in New York and Chicago the slums appear to

* See my remarks on this point in *Nature*, Oct. 31, 1889.

be five times as prolific as the most aristocratic portions ; and while good may come from the lowest born, and bad from the highest born, still the chances are decidedly in favor of the high born. A few rise above the level of their birth, a few sink below it, but the great majority of men remain for their lives on the general level of society in which they were born. The United States would be a greater nation with 10,000,000 choice inhabitants than with ten times 10,000,000 of the ill bred and low bred. Athens by the vulgar test of numbers was but a small and mean city, but in true greatness as revealed in far reaching spiritual power, she stands in the very forefront.

Again it will be objected that scientific schemes for human breeding would inevitably destroy that beautiful flower of Christian civilisation, the poetry and romance of love. Sentiment and chivalry would wither, and brutality and cold calculation would supplant all tender and refined emotion. I should answer that the true refinement which refuses to obtrude the things of sense, and true purity which refuses to dwell on them salaciously, are perfectly compatible with the fullest knowledge and the consequent action. Lubricity breeds best upon a half knowledge acquired in dubious ways. A serious practical scientific treatment of this subject will not glorify the flesh with the fierce gusto of Walt Whitman, nor, with the Zola school, dwell upon animalism with the morbid detail of a heated imagination ; but it will bring into the clearest light the laws of sex and the rules for the development of the human race into the perfect man. These laws of nature, which science reveals, are laws of duty and laws of God, and when once appropriated as such by Ethics and Religion, they will become the basis for all that is high in emotion and chivalrous in action.

In that most vital of matters, human breeding, man is far behind his progress in all other spheres of action ; but here as elsewhere Science must enter, not to destroy but to fulfil, to build up manhood and womanhood into the perfected relations which can only come from rational action, illuminated by complete knowledge, and sanctioned by noblest sentiment.

HIRAM M. STANLEY.

THOUGHT AND LANGUAGE.

I HAVE read with interest Prof. Max Müller's paper on the above subject in the current issue of *The Monist*, not only because it is in large part devoted to a consideration of my own work on "Mental Evolution," but still more because the explanations which it supplies touching certain points of disagreement between us appear to show that I have not misrepresented his statements, even if, as he alleges, I have misapprehended his meanings.

The work to which allusion has just been made was published in 1888, and, as far as I am aware, it is only now that Prof. Max Müller has sought to meet my views as there expressed. Hence we may take it that his answer is, at all events, well matured. Furthermore, we may take it, from the tone in which his answer is conveyed, that he credits me with having had at least an honest desire to understand, and accurately to represent, his meaning in all the places where I have ventured to criticise it. It appears, however, that at all events in one important respect I have betrayed "a complete misapprehension" of his meaning—viz. with reference to his "theory of the origin of roots" (*The Monist*, p. 582); and it is for the purpose of correcting this misapprehension that he has published the latter half of his present paper. My reply, therefore, must take the form of excusing myself for the complete misapprehensions which are alleged.

It is desirable at the outset to emphasise a distinction which I was careful to draw in my work on "Mental Evolution in Man"—that, namely, between philology and philosophy. A man may be an excellent authority on the "Science of Language," and yet but

a very indifferent writer on the "Science of Thought." On the other hand, a man may know nothing at first hand touching the special province of a philologist, and nevertheless be fully capable of criticising what a philologist has published in the way of theoretical deductions from his facts—especially where these deductions quit the sphere of philology, and soar into that of Darwinian, or anti-Darwinian, speculation. This distinction, indeed, between the particular science of philology and the general scope of philosophy, Prof. Max Müller himself recognises where he says: "While the student of language seems to me to have a perfect right to treat the roots of language as ultimate facts, it is difficult for the philosopher not to look beyond." (*The Monist*, p. 579.) Nevertheless he complains of me because, while accepting all his philological facts upon his authority as a philologist (save in so far as they are not accepted by other philologists), I have been obliged to express dissent from not a few of his theoretical deductions—especially, as I have already indicated, where these have reference to the general doctrine of evolution as applied to the mind of man. But how, I may ask, could a treatise be written on "Mental Evolution in Man," or "The Origin of Human Faculty," without considering the results which have been gained by the science of comparative philology? Or how can it be maintained that, in order to deal with these results in relation to the general theory of descent, a writer must first of all himself become an authority in that particular science? At any rate, I deemed it enough for the only purposes which I had in view, to read attentively all the leading authorities in this science, and, after extracting from them the information upon matters of fact which their researches had established, to show what I regarded as the bearing of these facts upon the theory of mental evolution. Nor can I plead guilty to the charge of arrogant presumption, which the following words appear to convey:

"We see in his case how dangerous it is for a man who can claim to speak with authority on his own special subject, to venture to speak with authority on subjects not his own. Professor Romanes has, no doubt, read several books on philology and philosophy, but he is not sufficiently master of his subject to have the slightest right to speak of men like Noiré, Huxley, Herbert Spencer, to say nothing of

Hobbes, with an air of superiority. That is entirely out of place." (*The Monist*, p. 383.)

Now that any such "air of superiority" occurs in my book, I must deny—and this is a matter of fact. Noiré is alluded to only with reference to his theory of the origin of language, which I go further in accepting than does any "philosopher" or "philologist," with the single exception of Prof. Max Müller himself. Huxley is mentioned in several places as a leading authority on anatomical matters, where my argument requires an authoritative statement upon them. Herbert Spencer, curiously enough, is never mentioned at all; while Hobbes is named only once, and then as sustaining, by a "shrewd analysis," an opinion which I am advocating by quotations from recognised authorities in philosophy. Truly, therefore, it would be well for my critic "to say nothing of Hobbes"; and better still if he had looked at my index before condemning my supposed treatment of Herbert Spencer, Huxley, and Noiré. As it is, his allusion to these names "is entirely out of place."

But even apart from this particularly unfortunate allusion, his more general charge as to my "venturing to speak authoritatively on subjects not his [my] own," is equally out of place. The following is my introduction to the chapter on Comparative Philology, and I cannot see that it betokens any "air of superiority":

"In now turning to this important branch of my subject, I may remark, *in limine*, that, like all the sciences, philology can be cultivated only by those who devote themselves specially to the purpose. My function, therefore, will here be that of merely putting together the main results of philological research, so far as this has hitherto proceeded, and so far as these results appear to me to have any bearing upon the 'origin of human faculty.' Being thus myself obliged to rely upon authority, where I find that authorities are in conflict, I will either avoid the points of disagreement, or else state what has to be said on both sides of the question. But where I find that all competent authorities are in substantial agreement, I will not burden my exposition by tautological quotations."

* * *

Having thus disposed of a merely personal matter, I may pass on to my justification of the "complete misapprehension" into which I have fallen with respect to Prof. Max Müller's work on the "Science of Thought."

In the first place he tells us :

"On page 267 Mr. Romanes says that I profess, as a result of more recent researches, to have reduced the number of Sanskrit roots to 121. I wish I had. But the number of roots in Sanskrit stands as yet at about 800 : the number 121 of which he speaks is the number of concepts expressed by these roots, many of them conveying the same, or nearly the same, idea." (*The Monist*, p. 583.)

Now it is quite true that on page 267 I made the statement which is here challenged ; but as I immediately go on to speak repeatedly of the "number 121" as being "the number of concepts expressed by the roots,"—and actually quote at length the whole 121 concepts with Prof. Max Müller's own heading,—I am not sure that the point is worth the stress which is now laid upon it. Nevertheless, I may explain why in this one passage I used the word "roots," instead of the word "concepts." Briefly, the only reason was because, according to Prof. Max Müller's theory of the origin of roots, it seemed to me virtually the same thing, from a psychological point of view, whether we speak of the reduction in question as pertaining to roots or to concepts. For, according to the theory, "every root embodies a concept," or is the obverse side of a concept. Consequently, if the Sanskrit language presents some 800 roots, while it is expressive of only 121 concepts, the balance of the 800 roots must be concerned in conveying the same, or nearly the same, ideas—as Prof. Max Müller himself expressly asserts in the above quotation from *The Monist*. Indeed, the whole object of his psychological analysis of linguistic roots was to prove that such is the case ; and, therefore, that the 121 roots which serve to convey the 121 concepts are the only roots required for the purposes of communication in Sanskrit speech. No doubt it would have been better if I had stated all this in my book ; but even if its omission led to obscurity, I can scarcely see that on this account there could have been a "misrepresentation" where there was certainly no "misapprehension." For, as already stated, I spoke of "121 roots" only once, while I alluded to "121 concepts" many times—and usually, moreover, in inverted commas. Lastly, it may be observed that, following his theory concerning the "origin of roots," Prof. Max Müller himself so far identifies roots with concepts as to

head one of his lists, in large capitals—ROOTS OR CONCEPTS. Therefore in saying that he professed to have reduced the psychologically efficient elements of Sanskrit speech to 121 constituents, it did not appear to me that I was departing from his own terminology when in one passage I spoke of these 121 constituents as roots, while everywhere else I spoke of them as concepts. "Give us," he says, "about 800 roots, and we can explain the largest dictionary; give us about 121 concepts, and we can account for the 800 roots." ("Science of Thought," p. 551.) Well, if this is so, the 800 roots (i. e. phonetically separable elements) have been reduced to the 121 "concepts or roots" (i. e. psychologically separable elements). My critic cannot both have his cake and eat it. Either he must abide by the philological meaning of a root, as the ultimate result of philological analysis; or else he must abide by his own philosophical meaning of a root, as the embodiment of a concept. Under the former definition there will be about 800 roots of Sanskrit; under the latter definition, and according to his analysis, there will be only 121.

* * *

The next point with regard to which "complete misapprehension" is alleged may best be presented by my critic's own words, thus:

"Professor Romanes thinks it necessary to remark that 'these concepts do not represent the ideation of primitive man'! I never said they did. I never pretended to be acquainted with the ideation of primitive man. All I maintained was that, making allowance for obscure words, every thought, that of the lowest savage as well as of the most minute philosopher, can be expressed with these 800 roots, and traced back to these 121 concepts." (*The Monist*, p. 584.)

Now, it is perhaps needless to say, I am extremely glad to learn that such was the meaning intended; but I trust that the following quotations will furnish a sufficient excuse for my misunderstanding of it:

"I hope that those who will carefully examine the results at which I have arrived, will admit that they prove by overwhelming evidence that the meanings of roots are really what we expected them to be, and that they express the primitive social acts of primitive social man, and the states more or less closely associated with such acts." ("Science of Thought," p. 403.)

From this it appears that if Prof. Max Müller never professed to be acquainted with the ideation of *primitive* man, he did profess to have proved, by overwhelming evidence, a very large acquaintance, not only with the ideation, but also with primitive acts of primitive *social* man. Possibly his acquaintance with both these matters is very much more intimate than mine; but as I have always taken it to be virtually certain that "primitive man" was "social" in his habits, I should like to learn the reasons which have induced my critic to believe in a still more "primitive man," who was addicted to a solitary mode of life. For, otherwise, the only distinction on which his criticism appears to rest is a distinction without a difference.

Again he says:

"The Science of Thought assures us that every thought that ever crossed the mind of man can be traced back to about 121 simple concepts." (Ibid, p. 418.)

And that the word "man" here is not intended tacitly to exclude "primitive man" (whether "social" or solitary), I gathered from the fact of the 121 concepts in question being tabulated under the heading, in large capitals, THE 121 ORIGINAL CONCEPTS. For, if the word "original" here was intended to mean original only with reference to the Sanskrit language, why did the writer follow it up with his statement about the Science of Thought, assuring us that *every* thought which had *ever* crossed the mind of *man* could be *traced back* to these 121 original concepts?

Lastly, not only by such particular passages was I led to suppose that the writer was referring to "primitive man" when he was writing about "primitive social man," etc.; but still more was I led to suppose this by the whole drift and tenor of his work. For what would be the sense of all his disquisitions upon the importance of linguistic science in its relation to the theory of evolution, if he intended to restrict his inferences to the *semi-civilised* condition of man, which (as he allows) must have been the condition of the speakers of Sanskrit? Clearly, if this were his intention, there would have been *no* sense in all these disquisitions; and therefore, here again, my critic cannot both preserve his cake and consume it. Either let him adopt the position which he takes up in *The Monist*, as a

philologist pure and simple, who "never pretended to be acquainted with the ideation of primitive man," who refuses to go beyond the "facts" of the "Science of Language," or to speculate upon their theoretical relations to the "Science of Thought": or else let him do as he does in his published works—superimpose upon his functions as a "Student of Language" the functions of a "Philosopher," freely speculate upon "the origin of roots," elaborately argue the whole psychology of "concepts," and strenuously endeavor to show that "language is the Rubicon of mind," which not only now, but at all times, has separated man from the lower animals, as a being mysterious in origin, if not unique in kind.

* * *

Next we are told :

"Professor Romanes dwells on what he calls the interesting feature of all roots being verbs. This is simply a contradiction in terms. In giving the meaning of roots scholars generally employ the infinitive or the participle, "to go," or "going"; but they have stated again and again that a root ceases to be a root as soon as it is used in a sentence." (*The Monist*, p. 584.)

Now, by a "verb" I understand a word that signifies either an action or a state; and by a "root" I understand—here agreeing with Prof. Max Müller himself—"an element of human speech," so far as this has been hitherto reduced by philological analysis. Again, I hold—in this also agreeing with him—that "as soon as a root is used for predication it becomes a word, whether outwardly it is changed or not." ("Science of Thought," p. 440.) Well, if we are agreed upon these points, I do not see how there can be any "contradiction in terms" when I stated the fact "of all roots being verbs."

In the first place, if one were to agree with Prof. Max Müller himself in holding that originally every root was "something real, something that was actually used in conversation" (*Ibid.* p. 420), there can be no contradiction in terms if we translate this into saying that originally every root was a word—for the mere quibble that not until it was spoken did the root become a word does not affect the matter, any more than if we were to say the same of any word now in use, which has given birth to a progeny of other words. But even if we disagree with Prof. Max Müller, and suppose that roots

are merely "phonetic elements," or the residual extract of a group of originally allied words, we should still be correct in saying that the "concepts" which they "embody" are all concepts which now admit of being expressed in equivalent words.

So much for the "contradiction in terms," which is alleged to arise if we speak of roots as *words*. Touching the second point, or the accuracy of saying that the words which roots express are always *verbs*, my defence is sufficiently easy. For to say, as my critic says, that "in giving the meaning of roots scholars generally employ the infinitive or the participle," appears to me a most unphilosophical observation, since it appears to indicate that in the opinion of its writer the significance of a verb is but conventionally given to a root by the verbal form into which it is thrown by scholars. But the fact is that, even if they tried, scholars could rarely deprive a root of its significance as a verb, no matter into what verbal form they might choose to throw it. Take any root at random, such as HA *to go*. However much we may ring the changes, as "to go," "going," "goer," it is impossible to get rid of the fundamental significance of the root as a verb. And although it is, of course, possible to select a root which presents a more equivocal interpretation, the cases in which this can be done are, comparatively speaking, not numerous, and apparently never such as to exclude the probability of its having primarily conveyed the force of a verb. For instance, HUR *to fall*, may be regarded either as a verb or a noun-substantive; but we cannot say that there is anything to render more probable the view of the root having been originally expressive of a fall than of the act of falling; and inasmuch as there do not appear to be any roots which *can* only have originally had the force of nouns or adjectives, while there are so many which *can* only have originally had the force of verbs, we may fairly conclude that in the accidentally more equivocal cases the roots were likewise originally expressive of actions or of states. For, if not, why are there not as many roots which convey such meanings as *sky*, or *blue* (which never can have had equivalents in the forms of verbs), as there are roots like HA, where we cannot doubt that the meaning from the first must have been the meaning of a verb?

I am the more surprised at this head of Prof. Max Müller's criticism, because it belongs to the very essence of his own theory touching "the origin of roots," that they *must* all originally have conveyed the meaning of verbs. Therefore from end to end of his own book he constantly alludes to roots as expressive of "actions"; never as expressive of objects or qualities. For instance :

"All, or nearly all, the roots of Sanskrit, or rather of the Aryan family in general, express, as we shall see, acts, and more particularly the commonest acts performed by members of a primitive society." ("Science of Thought," p. 272.)

And even in *The Monist* article itself the same thing is stated thus :

"Let us remember that a most careful psychological analysis had led Noiré to the conclusion that the germs of all conceptional thought were to be found in the consciousness of our own repeated acts. And let us place by the side of this, the well-ascertained fact that the germs of all conceptional language, what we call roots, express with few exceptions the repeated acts of men." (*The Monist*, p. 580.)

Again :

"We begin with the fact that the great bulk of a language consists of words, derived, according to the strictest rules, not from cries, but from articulate roots. No one denies this. We follow this up with a second fact, that nearly all the roots express acts of men. No one denies that." (p. 588.)

Very well then, I submit that the only real distinction between Prof. Max Müller's rendering of this "fact," and my own rendering of it, consists in my having added "states" to "acts," and observing that then the comparatively few outstanding roots may be included with the "nearly all" under the one category of "verbs."

For the distinction which he draws in *The Monist* is not a real distinction : it is merely a verbal distinction.

Here it is :

"If Professor Romanes approves of my saying that roots stood for any part of speech, just as the monosyllabic expressions of children do, I can only say that, if I ever said so, I expressed myself incorrectly. A root never stands for any part of speech, because as soon as it is a part of speech it is no longer a root." (*The Monist*, p. 585.)

This, as I have previously observed, is merely a quibble. If originally every root was "something real, something used in conversation," originally all roots were *words*, in just the same sense

as "the monosyllabic expressions of children" are words. And if "nearly all these roots express the acts of man," while most (if not all) the outstanding residuum were apparently expressive of states, it follows that the roots in question were not only words, but *verbs*. And in stating this "fact" I supposed that I was but following Prof. Max Müller's statement of it, where he constitutes it the philological basis of his theory on the "origin of roots"—viz. that all roots sprang from sounds made by "primitive social man" when engaged in their "social *acts*." But, while accepting this fact, I objected to the theory raised upon it, because the latter did not consider that roots which originally had the force of verbs must have been more likely to have survived, and so to have come down to us, than those which may originally have had the significance of any other parts of speech. And it was only in order to supply this further consideration that I alluded to the "fact" at all.

* * *

We come next to some disparaging remarks upon "babies," "parrots," and the lower animals generally (*The Monist*, pp. 586-7). Prof. Max Müller "refuses to argue" with me, "or any other philosopher, either in the nursery or the menagerie." So be it. As a philologist, of course, he is assuredly right; no one would expect him so to argue. But as a philosopher, who has written a large book on the "Science of Thought," he is no less assuredly wrong. And one may be pardoned for wondering at this intentionally ostrich-like attitude on the part of a philosopher—who is "going beyond the origin of roots"—with respect to the fundamental germs of the sign-making faculty.

Again, my critic appears to imagine that I am a supporter of the onomatopoetic theory—to the extent of regarding *all* human language as having originated in imitations of natural sounds. (*The Monist*, pp. 586-7.) But over and over again I have stated that this is not my view. I believe, indeed, that there is a very large amount of truth in this theory; but I deem it on all grounds most improbable that the principle of imitation has been the *only* principle concerned in the origin of speech. I have argued that probably

many other principles must have been concerned, including the "synergistic" principle suggested by Noiré, and enthusiastically adopted by my critic as alone sufficient to explain the whole problem of the origin of speech—and this although it is clearly but a particular branch of the general onomatopoetic theory. Hence, so far as I am concerned, it does not signify one iota whether any given root owed its origin to the principle of imitation, or to some other of the general principles which I believe to have been concerned in the birth of articulate language. And, if possible, still less does it signify whether or not in the development of any given word, such as "thunder," the original root-sound has been afterwards imitatively modified, "from a feeling that it should be so." These matters are no doubt of importance within the four corners of philology; but in relation to the "biological theory" of descent they present no importance at all.

Yet I am told:

"Those who cannot see the difference between a man, or for all that, between a mocking-bird, saying *Cuckoo*, and a whole community fixing on the sound of TAN, as differentiated by various suffixes and prefixes, and expressing the concept of stretching in such words as *tonos*, *tone*, *tonitru*, *thunder*, *tanu*, *tenuis*, *thin*, should not meddle with the Science of Language." (*The Monist*, pp. 588-9.)

Doubtless. But as no word of this applies to me, I may be permitted to observe that if any one who has read my book can possibly suppose that it does, he should not meddle with the Science of Thought.

* * *

In conclusion, if it be the case that I have completely misapprehended Prof. Max Müller with regard to the points which he has mentioned,—and all of which I have now considered,—have I not furnished sufficient justification? Even now I cannot see in what respects it is possible to amend any subsequent edition of my book, so as to correct the misapprehensions which are alleged. But although my "mistakes" are thus far from "clear," I am glad to have had this opportunity of publicly discussing them with Prof. Max Müller, if only for the sake of adding the following remarks.

Be it observed, in the first place, that whatever may be thought

of the foregoing "justification,"—whether it be held that the misapprehensions are due to ambiguity on the one side or to obtuseness on the other,—at least it is certain that the misapprehensions complained of all have reference to points of no importance whatsoever as regards the general theory of descent, even although some of them are not altogether without importance as regards the particular science of philology. Thus it is quite immaterial, so far as the doctrine of *Mental Evolution* is concerned, whether we say that the roots of Sanskrit are 800, philologically speaking, or 121, psychologically speaking. Again, as soon as it is explained by Prof. Max Müller that by his "121 original concepts" he means the number of concepts "original" only as regards the Sanskrit language; that by "primitive social man" he means only the semi-civilised progenitors of the Indo-European race; that by "every thought that ever crossed the mind of man" admitting of being "traced back to about 121 simple concepts," he means no more than that such is the case as regards the recent and highly evolved Aryan branch of the human species;—when once all this is explained, it becomes evident that thus far there *can* be no difference of opinion between us. For in that case he is not dealing with "the Origin of Human Faculty," either in regard to language or to thought: he is considering merely the higher inflorescence of both. Once more, whether all, or nearly all, the roots of Sanskrit can properly be called *words*, and, if so, whether we must not go still further and call them *verbs*,—these are questions of mere terminology. If the roots were originally "used in conversation," and if, as thus used, they were, with but few doubtful exceptions, all expressive of "acts" or "states," it becomes mere verbal hair-splitting to challenge the propriety of saying that the roots were originally verbs. At all events, the matter has nothing to do with the general question of man's derivative origin. Lastly, the same has to be said of the purely philological question as to how far the principle of imitation has obtained in the first formation of these archaic "words," or "roots." For, archaic though they be in a philological sense, in a phylogenetical sense they are things of yesterday, and so can scarcely be said to have any direct relation at all to "the origin of speech," or the rise of articu-

late sign-making. This has to be inferred from observations in the 'menagerie,' as distinguished from research in the library; and the fact that Prof. Max Müller expressly refuses to give me the pleasure of his company where the best materials for studying the really "primitive" condition of the sign-making faculty are to be met with, merely renders more impossible than ever any real collision between his linguistic studies on the one side, and my "biological theory" on the other.

But although it thus appears sufficiently evident that my "misapprehensions" of his linguistic conclusions are as unimportant in relation to the theory of descent as they are few—and, I think, also excusable—in themselves, it is impossible to doubt that far below the level of Sanskrit roots, and far beyond the range of philological science, there is a wide difference of opinion between us. For when he passes from the "Science of Language" to the "Science of Thought,"—when he quits his sphere as a philologist to enter that of the philosopher,—he persistently and consistently affirms that what he calls "the old barrier between man and beast" remains, and that he is as yet unable to perceive how it can ever be removed. This barrier of course is predicative language—the obverse side of conceptional thought; and the firm opinion thus expressed by so eminent a philologist is not only of weight *per se*, but is rendered more so on account of the manifest freedom from prejudice with which it is associated. It is on this account that I devoted so much space in my book on "Mental Evolution" to a consideration of his views; and therefore I am sorry that his present reply has not been directed to meeting my criticisms on this really important matter of philosophical doctrine, rather than to indicating "misapprehensions" with regard to such merely trivial matters of a purely philological kind as those which I have here been dealing with. But perhaps at some future time he may give me the benefit of his criticism upon my work as a whole, or not merely on the fringes of such details as really have no bearing on the objects of that work.

And, if he should ever see his way to doing this, I am quite sure that the discussion would be one of a friendly character. For the points at issue would all have reference to that large and vague

domain of speculative theory touching "the origin of human faculty," where it is inevitable—and, in my judgment, even desirable—that wide differences of opinion should obtain. We are but at the commencement of a great and obscure problem, which only in our own generation has been presented by the science of biology to the contemplation of philosophy. Therefore it would be folly indeed if any man were to regard his own opinions upon it as other than provisional—and even more foolish if he were to introduce any "*meum* and *tuum* into these discussions."

Thus I invite Prof. Max Müller to state the grounds of his assertion in *The Monist*, that "all the facts of real language are against" me as an advocate of what he calls the biological theory of the developmental origin of man. This theory, he says, "derives no support whatever from the Science of Language." I believe, on the other hand, that these are wholly unwarranted statements; and that the Science of Language does support the theory in question to as high a degree as is possible from the nature of the case. On account of this great difference of opinion, I felt, when writing my book, that I should be doing but scant justice to the matured judgment of so eminent a philologist if I did not carefully consider all that he had written upon the subject. And so, as I have said, I devoted more of my book to a consideration of his views than to those of any other philologist; and while accepting his scientific facts on his authority as a philologist, I nevertheless felt it incumbent on me to show why his philosophical deductions, where they had reference to the theory of descent, appeared to me by no means of equivalent value. This distinction, as I observed at the commencement of the present article, is surely a legitimate distinction; and I should be sorry indeed if anything that I have ever said can appear inconsistent with the genuine admiration which is due to Prof. Max Müller as "a student of language," or with the no less genuine esteem which I have the best reason for knowing is due to him as a friend.

GEORGE. J. ROMANES.

THE CONTINUITY OF EVOLUTION.

THE SCIENCE OF LANGUAGE VERSUS THE SCIENCE. OF LIFE,

AS REPRESENTED BY PROF. F. MAX MÜLLER AND PROF.
GEORGE JOHN ROMANES.

ALL the sciences form, or at least ought to form, one great system, culminating in the science of sciences. Therefore it is more than doubtful how any science could exist without being somehow in contact with other sciences; and all of them must stand in some relation to philosophy. It is necessary that each science should develop in relative independence of the other sciences. We cannot expect to decide, for instance, chemical problems by physical or purely mechanical laws before we have carefully searched the nature and conditions of chemical processes. But as soon as this has been done we can expect that a comparison between the results of two or more sciences will throw new light upon the subject-matter on both sides. Solomon says: "To everything there is a season and a time to every purpose under the heaven." Thus the sciences have to grow, each one on its own grounds, and when they have reached a certain state of maturity, they will coalesce with each other. And two sciences will by their coalescence fertilise the one the other so as to produce a new department which may by and by develop into a special science.

Now it appears to the uninitiated as if the spiritual world of science were in every respect different from the world of objective realities around us. While in the world of bodily realities the struggle

for existence is fought eternal peace is supposed to reign in the sacred halls of intellectual aspirations. Says the German poet :

*"Hart in dem Raume stossen sich die Körper,
Leicht bei einander wohnen die Gedanken."*

This is true only in a very limited sense. Ideas are the most intolerant beings imaginable. The struggle for existence is raging as fiercely in the intellectual realm as in the world of realities, and there also the law that the fittest will survive holds good.

Far be it from us to denounce this state of general warfare, for although it is hard on those who succumb, it is the means by which evolution becomes possible ; and evolution in the domain of science means a nearer approach to truth. If in the evolution of thought two neighboring sciences have developed so far as to meet, a struggle will ensue. The ideas on the two sides will have to fight before they coalesce. It is natural that different scientists look at things from different standpoints. They have developed a terminology which exactly suits their purpose and thus the representatives of the different sciences are often like people of a different nationality. They do not understand each other because they speak different languages. Moreover they have not unfrequently a different religion ; that means, their ideas about truth and the test of truth appear to be different and sometimes they regard one another as no better than heathens. The battle is unavoidable, and considering all in all, the battle is desirable, it should not be avoided. The fittest to survive being the truest, the whole progress of science through the struggle for existence among ideas consists in the approach to truth.

It may be objected that there are peacemakers who will reconcile the contending parties. True. And it is further true that the aim of every war is peace. But a peacemaker can be successful only if his mind is broad enough to let the whole battle be fought out within himself. The battle itself is and will remain unavoidable. Idea stands against idea, and the mental process of reflection is nothing but a struggle of conflicting ideas which takes place in one and the same mind. The aim of all reflection is the settlement of the conflict, so that all ideas will agree. The two parties disappear

in one; errors are given up, and that which is consistent only will remain. In other words Dualism makes room for Monism.

It is a good sign of the times that a battle has begun to rage between the so-called natural sciences and the science of language. The old Hegelian distinction between the *Geisteswissenschaften* and the *Naturwissenschaften* has been surrendered; and Prof. F. Max Müller was among the foremost to inculcate the truth that philology is a natural science. If philology is a natural science it cannot be but that its subject of investigation is a part of nature and as such it stands in close relation to other parts of nature. One and the same thing may be the subject of investigation of different sciences. One and the same plant may be an object of observation to the physiologist, to the botanist, to the druggist, to the physician, and to the chemist. Their standpoints and their purposes being different, they will bring to light very different results, and if these results are contradictory among each other the conflict is at hand. It cannot be shirked but must be decided by an honest and square fight. We have witnessed of late a conflict between philology and anthropology concerning the origin of the Aryas and it looks as if this conflict will contribute much to promote our knowledge of the oldest history of mankind, although the last word has not as yet been spoken: *adhuc sub judice lis est*.

We are now confronted with a conflict between Philology and Biology. The first skirmishes have been fought by two men who are entitled to speak, each one in behalf of his science. Prof. F. Max Müller stands up for philology and Prof. George John Romanes for biology.

Professor Romanes takes it for granted that the rational mind of man has developed gradually from the lower stage of the brute. He says in his book "Mental Evolution in Man," p. 276:

"The whole object of these chapters has been to show, that on psychological grounds it is abundantly intelligible how the conceptual stage of ideation may have been gradually evolved from the receptual—the power of forming general, or truly conceptual ideas, from the power of forming particular and generic ideas. But if it could be shown—or even rendered in any degree presumable—that this distinctly human power of forming truly general ideas arose *de novo* with the first birth of

articulate speech, assuredly my whole analysis would be destroyed: the human mind would be shown to present a quality different in origin—and, therefore, in kind—from all the lower orders of intelligence: the law of continuity would be interrupted at the terminal phase: an impassable gulf would be fixed between the brute and the man."

And Prof. Max Müller criticises the position of Professor Romanes in an article on Thought and Language (*The Monist*, Vol. I. No. 4, p. 582); he says:

"My learned friend, Professor Romanes, labors to show that there is an unbroken mental evolution from the lowest animal to the highest man. But he sees very clearly and confesses very honestly that the chief difficulty in this evolution is language and all that language implies. He tries very hard to remove that barrier between beast and man. . . . Professor Romanes is, I believe, a most eminent biologist, and the mantle of Darwin is said to have fallen on his shoulders. Far be it from me to venture to criticise his biological facts. But we see in his case how dangerous it is for a man who can claim to speak with authority on his own special subject, to venture to speak authoritatively on subjects not his own."

It is not at all my intention to appear on the battle-field as a peacemaker between these two generals, or to settle the problems that arise from the conflict between philology and biology. That will be better done by the parties concerned, and I am rather inclined to speak with Schiller when he thought of the struggle between the transcendentalist philosopher and the empirical naturalist:

"Enmity be between you! Your alliance would not be in time yet.

Though you may separate now, Truth will be found by your search."

I look forward with great interest to further discussions which will bring out with more clearness the positions of both parties, and it is not impossible that both parties as soon as they have better understood each other, will agree much better than either of them expected. But it may be permitted me to make a few comments upon a proposition that is involved in this conflict, which, however, properly considered, is neither of a philological nor a biological nature. This is the idea of the continuity of evolution. Prof. Max Müller says somewhere that, if a Darwinian means an evolutionist, he had been a Darwinian long before Darwin. "How a student of the science of language," he says, "can be anything but

an evolutionist is to me utterly unintelligible." So there is no doubt about his being an evolutionist as much as Professor Romanes. But the question is, What means evolutionist? Is he an evolutionist who believes in a piecemeal evolution interrupted here and there by acts of special creation? In my conception of the term, an evolutionist believes in evolution wherever there is life and this involves the wholesale rejection of special-creation acts as well as of the idea that any being or organism (the organism of language included) could ever have made its appearance in full growth and maturity or that any phenomenon of life could present a break in the continuity of evolution.

The Greek myth tells us that the Goddess of Reason, the blue-eyed Pallas Athene, was not born like other gods and mortals in the natural way of a slow development. She jumped out of the head of Zeus full-armed in all her beauty and gifted with the powers of her unusual accomplishments. Is this myth true after all? Does the Logos of rational thought present us with an instance in which the development process has been interrupted? If so, we shall have to abandon the evolution theory as a theory and return to the old-fashioned view of special-creation acts. The difference between these two views is not of degree, but of kind. He who accepts the principle of evolution as the law of life abandons forever the idea of special and unconnected beginnings as much as that of special-creation acts. He cannot with consistency believe in an evolution with interruptions, for the theory of evolution is serviceable only if evolution is conceived as continuous. Prof. Max Müller of course has a right to define and use the word evolutionist as he sees fit, but if he excludes continuity from the idea of evolution, we declare that he has taken out the quintessence of its meaning and the core of its truth.

Why this is so, we shall now briefly discuss.

The evolution theory has been gradually developed by empirical investigations and it owes its all but universal acceptance to the great mass of *a posteriori* evidence furnished by the natural sciences. It rests nevertheless upon a better and safer foundation than isolated instances of hap-hazard experience. Its foundation is

quarried out of another and more reliable material. The evolution theory rests upon the ground of *a priori* arguments.

By *a priori* we do not understand anything mysterious, but simply such cognition as possesses universality and necessity. That cognition which is in possession of universality and necessity is also called formal cognition. The formal sciences (for instance arithmetic, mathematics, pure logic, and pure mechanics) give us information about such truths as are applicable, because they are purely formal, to the formal conditions of anything and everything possible. Because we know *beforehand* that the purely formal laws will hold good under all conditions Kant called their formulated theorems "*a priori*." All the objections to the idea of apriority made by John Stuart Mill and other empiricists are due to their misinterpretation of the term.*

Mr. Mill was mistaken when he thought Kant meant *a priori* cognitions were innate ideas which came to man from spheres unknown. The very first sentence of Kant's "Critique of Pure Reason" proves that Kant knew of no other knowledge than that which begins with experience. Kant says, "That all our knowledge begins with experience there can be no doubt." But our knowledge consists of two elements, viz. the empirical and the formal. The former bears always the character of the special and incidental, the latter of the universal and necessary. The former is sensory, being furnished by the senses, the latter is properly mental originating in and with the action of the mind in dealing with sense-materials, in arranging them and bringing them into certain relations.

Formal knowledge is different in kind from empirical knowledge. The rule "twice two is four" will hold good for all possible cases, but the statement "A swan is white" does not hold good for all possible cases. European swans as a rule are white, but Australian swans are black, and for all we know, we might find swans that are blue, or red, or yellow. Empirical knowledge is full of exceptions, formal knowledge is rigid, there is no exception to any rule of formal knowledge.

* Compare the article *The Origin of Thought-Forms* in the present number, under the caption "Diverse Topics."

All formal knowledge has developed by degrees. The history of the sciences, of mathematics, logic, arithmetic, and also of the natural sciences furnishes sufficient evidence. The formal part of the natural sciences, by Kant called *reine Naturwissenschaft*, consists of such cognitions as the law of cause and effect and the law of the conservation of matter and energy. The formulation of these laws has been accomplished after much and careful empirical investigation. And it could not be otherwise. The latter law was elaborated in its full clearness long after Kant. The law of causality and the law of the conservation of matter and energy are purely formal, they are not sense-impressions and do not contain any sensory elements. They are general rules of universal applicability which being rigidly universal and without exceptions are necessary under all conditions. Before we make any experiment we can know that they will hold good in the experiment. Indeed all our experimenting is based upon the supposition that the law of causation holds good and that there can be neither an increase nor a decrease of matter and energy.

The mistake made by the so-called transcendentalists is this, that they consider formal thought as having an independent existence, being ready at hand before cognition is possible, while in fact it is a part of cognition which at least in its germ is present in every actual experience.

The theory of evolution is not more and not less a formal principle than the law of causation and the law of the conservation of matter and energy. Indeed it is nothing but the same thing applied to a special case. The theory of evolution is the principle of the conservation of matter and energy applied to the province of life. The theory of evolution denies the possibility of special acts of creation. There cannot come something out of nothing. And the new creations that actually originate daily before our eyes are not creations from nothing, they are simply transformations. There was a time on earth in which no living being existed, neither plant nor animal. How did life originate? Our answer is, It did not originate out of nothing, but it evolved. Non-organised matter organised. That non-organised matter must contain the elementary

conditions of organised life is a conclusion which we cannot escape from our point of view ; and which is fully and satisfactorily corroborated by our daily experience that water, earth, and air under the sun's influence are changed into wheat ; and wheat is manufactured into the bread which nourishes man and sustains his life. Non-organised particles of matter are constantly being organised in living organisms and displace the worn-out materials in their tissues—not one atom of the latter remaining for good in a healthy living body.

The theory of evolution may be called an hypothesis, an assumption, a presumption. But in that case we must say with Mill that the rule twice two is four is also a mere assumption. The evidence for the latter is not stronger than that for the former. Mill declares that after all twice two might somewhere be five. Exactly so and not otherwise evolution might be somewhere interrupted, so that something would originate out of nothing instead of evolving from other things through transformation.

Prof. Max Müller speaks very sarcastically about the speechless man, the *homo alalus* who is supposed to be the ancestor of the present man. He says (l. c., p. 585):

"Of the *Homo alalus*, the speechless progenitor of *Homo sapiens*, with whom Professor Romanes seems so intimately acquainted, students of human speech naturally know nothing."

Prof. Max Müller also condemns all efforts of approaching the problem of the origin of language through observation of children and animals. The former he calls "nursery philology" the latter "menagerie psychology." And it is certainly true that the problem of the origin of language cannot be solved from observations of children or animals, because the problem lies in another field. The problem is not how a ready made language is transferred upon the growing mind of a baby but how speechless beings developed into speaking beings. And all the intelligence of clever animals is still very different from the rational thought of man. This is true, but it is also true that good observations of animal psychology and also of nursery philology will throw some light upon the evolution of rational thought.

Prof. Max Müller says:

"How can we attempt to realise what passes within the mind of an animal?
... We can imagine anything we like about what passes in the mind of an animal,
—we can know absolutely nothing." ■

We are fully aware of the fact that the problem of the origin of language is quite different from the problems of animal psychology. A solution of the latter, which are extremely complex and difficult, would not help us to solve the former. This being conceded we can nevertheless see no reason why animal psychology should be condemned and given up as a hopeless task.

It is not true that "we can know absolutely nothing about what passes in the mind of an animal." It is true we cannot see the animals' feelings and thoughts, but we can see their actions which reveal their feelings as much as and sometimes even plainer than the speech of our brother man reveals his thoughts. Might we not say with the same reason, "We see only the printed book of a scientist (which is an expression of his views as much as the behavior of an animal is of its feelings) but we can know absolutely nothing about what passes in the mind of that scientist. All we can do is to judge from analogy"? And should we on that account give up all reading and studying and also all arguing with others?

Animal psychology is not only justified as a science, but we can even hope that correct observations of animal intelligence will assist us in correctly understanding the higher intelligence of human thought. And "that some useful hints may be taken from watching children is not denied" by Prof. Max Müller either, although this little concession appears only in the shape of a short foot-note. The *homo alalus* is by no means a merely mythical figure, for according to the law of evolution man must have developed out of a being lower than the present man. His first ancestor must have been simple life-substance something like that of the *amœba*. He must have passed through a long period in which he was not capable of articulate speech. That we know nothing particular about the *homo alalus* is no proof against his existence. Moreover every infant is an actual real *homo alalus*, a speechless man, or should we according to Prof. Max Müller class our babies among the brutes?

Prof. Max Müller says (*The Monist*, p. 585):

"If, like Professor Romanes, we begin with the 'immense presumption that there has been no interruption in the developmental process in the course of psychological history,' the protest of language counts for nothing; the very fact that no animal has ever formed a language, is put aside simply as an unfortunate accident."

The theory of evolution rightly understood is no presumption in the usual sense of the word. It is no more a presumption than to say that something cannot come from nothing. And what is "the protest of language" which would disprove the continuity of evolution? That rational or human thought is something *sui generis*, that it is different in kind and not in degree from brute intelligence; that language is an impassable barrier between man and brute, being the Rubicon which no other animal has crossed. Very well. We agree entirely with all these propositions. Human reason is different in kind from brute intelligence and human reason has developed such as it is through language only. Nay reason is language. Noiré is right when he says, Man thinks because he speaks. But the Rubicon of language was not an absolutely impassable barrier. The speechless ancestor of man, whether we call him *homo alalus* or anthropoid, or even man-ape, *has* crossed it, and having crossed it he became the Cæsar of the animal creation.

Prof. Max Müller's theory of the identity of language and thought* is so valuable because it bridges the gap between the rational sphere of man and the not-yet rational sphere of the brute creation. It explains the origin of reason. The origin of reason in the world of living beings is explained as soon as the origin of language is understood, for reason develops with language and rational thought is nothing but rational speech. If the origin of language were an unfathomable mystery, Prof. Max Müller's view of the identity of language and thought would lose all practical importance.

The proposition of the identity of language and thought is a very radical idea; it is the fundamental idea of monism. In a more general form it was first pronounced by Giordano Bruno, who says

* I should prefer to speak of the oneness or inseparableness of thought and language, but since Prof. Max Müller has sufficiently explained himself, I use here his term "identity" in the sense of inseparableness as it is used by Prof. Max Müller.

somewhere that, if we could put the soul of a man into the organism of an animal, say of a snake, it would cease to be a human soul and become the soul of a snake. Speech would be changed into a hissing, in accordance with the snake's organs for uttering sounds. And in the same way all the feelings, all the concepts, all the desires and inclinations—in short the whole psychical life would be that of a snake.

Thought is the soul of language. As there are no ghost-souls, so there are no ghost-thoughts. And the soul is not something distinct from the organism, it is the form of the organism. It happens in fairy-tales that the Prince is transformed into a frog, but if a fairy could transform a man into a frog, his soul would certainly also become a frog-soul. Language is the visible organism of the invisible thought, and as is language, exactly so is thought.

The problem how language has developed was first answered by the onomatopoetic theory, "the bow-wow theory" as Max Müller calls it. Language was conceived as an echo of nature, as a reflex action that takes place in a living and feeling being. Yet this theory had to be abandoned, because an historical investigation of language proved that words with very few exceptions were not imitations of external sounds. Yet the spirit of investigation was not daunted by this defeat, and the bow-wow theory reappeared in a modified form. Language was still considered as a reflex action; however, it was conceived to be a reflex which re-echoed the impressions of natural phenomena as they had affected man. This was the exclamation theory which seeks the origin of language in the "ohs and ahs," the sighs and shouts of a feeling mind. Prof. Max Müller calls this theory "the pooh-pooh theory." This theory had also to be discarded because it was in conflict with the actual facts of the evolution of language. Next Noiré and Prof. Max Müller came with their theory, called by Noiré "the synergistic theory," which conceives language as the expression of common work, also called by Noiré the Logos theory, the sympathetic theory, and the causality theory. Prof. Max Müller in order to forestall any deriders of this theory suggests calling it "the yo-he-ho theory," yo-he-ho being the sailors' song when engaged in some common work as hoisting or hauling.

This yo-he-ho theory actually explains the origin of language, and it is, so far as we can see, not in conflict with any historical or philological facts. But in honor of the inventors of the onomatopoeic theory it must be recognised that the main idea of the yo-he-ho theory is the same as that of the bow-wow theory. The main idea is this: Language did not originate in man's mind out of itself in some mysterious way representing a break in the continuity of evolution, but it is a certain reflex-action of living and feeling beings taking place in consequence of external stimuli. This reflex-action however is not direct, but indirect. It is not that of a single being, it is the reflex-action of a whole society, engaged in common work. It developed in consequence of their common activity and through their want of intercommunication.

* * *

Prof. Max Müller charges against the evolutionist, that "the very fact that no animal has ever formed a language is put aside simply as an unfortunate accident." Is this a fair reprehension? Is not the fact that no animal, except man, crossed the Rubicon of language quite a distinct problem? And accepting Professor Noiré's theory of the origin of language which considers speech as the product of a common activity accompanied by what may be called *clamor concomitans*, I see very good reasons why other animals did not develop language. First, there is no animal, with the sole exception perhaps of ants and bees, that lives in societies. Some of them live in herds, but there is a great difference between a herd and a society. This difference is first a difference of degree, but gradually it becomes a difference of kind. Secondly, animals have no organs to work with, while man has his hands, and we may add, thirdly, that no animal, not even the parrot, has the same power of articulation.

Prof. Ludwig Noiré accepts without equivocation the idea that the speechless ancestor of man became a rational being by developing language and I was always under the impression that Prof. Max Müller agreed with his late friend not only concerning the identity of language and reason, but also concerning the origin of reason. But if Prof. Max Müller agrees with Noiré, why does he object to

the continuity of evolution which as he states in a private letter to us is "only a beautiful postulate"?

Now there are indeed facts which prove that the Rubicon of reason is not so impassable to animals as Prof. Max Müller makes us believe. Let us hear Noiré on the subject. He explains most logically that man performs his many labors and has become a civilised being only with the help of language, by naming things and handling them in his mind. Noiré says :

"It can be graphically shown, how ideas may represent for man the rôle of things real; how man has acquired the power of combining in his representative faculty the most remote objects, and thereby has been able to accomplish the great miracles of human industry and commerce. But all this would be utterly inconceivable without concepts, which impart to percepts their unity and self-dependence, bring about and multiply their rational connection. Hence also, no animal can ever advance a single step beyond *present* perceptive representation, can never escape from the constraint with which Nature circumscribes the narrow sphere of its wants. Unfortunately, however, in apparent contravention of this rule, ants to the present day carry on a regular and methodical species of agriculture, keep live-stock and domestics like we! Nay, they have been caught in conversations and social entertainments of a quarter of an hour's duration—God save the mark!*

This passage is full of humor, and the humor is slightly mingled with a comical anger and self-irony. There is a fine theory excellent in every respect worked out in all its details by the Professor and now he finds a few trifles of facts which possess the impudence not to adapt themselves to the theory. "*Gott besser's*," sighs Noiré, for it is not his fault that the ants accomplish things which they ought not to, and the good Lord is called upon to adapt nature with more rigidity to the Professor's theories.

Is there not an obvious reason why ants stand so high in their performances? Are not ants social beings, more so than any other animal? We are ignorant still of all their means of communication. But that they have some means of communication seems to be an established fact. When ants from different hills but of the

* *The Logos Theory*, by Ludwig Noiré. Translated from the German. *The Open Court*, iii. p. 2196. English translations of Noiré's most important articles concerning the origin of language, have appeared in Nos. 33, 137, 139, 141, 142 of *The Open Court*.

same kind give each other battle, it happens not unfrequently that a warrior attacks another warrior of the same people most fiercely, but both let go as soon as they touch each other with their feelers.* I refrain from telling stories about the life of these wonderful creatures partly because one well-authenticated report is sufficient for our purpose and partly because I must suppose that most of my readers are familiar with the facts as presented by Darwin, Lubbock, Forel, Huber, and many others. I will add only one observation which is so far as I know undisputed. If ants of a special kind rob the larvæ of another kind and educate them as their slaves, the slaves will in case of war or danger stand by their masters even against their own folks. They evidently speak the language of the hill in which they have been raised.

Professor Forel successfully made the experiment, with the assistance of ant-nurses, of raising together several kinds of ants from the larvæ of hostile species. The ferocious Amazons and the Sanguineæ did not show any enmity toward their comrades of the Præterensis and Rufa. When set at liberty and transferred to a new residence they remained together and behaved exactly as if they naturally belonged together. And this experiment may be quoted to corroborate the proposition of Prof. Max. Müller that "thought is thicker than blood."†

Now it would be a desperate case for Professor Noire to maintain his theory in the face of these facts, if by language we have to understand vocal signs only. Yet the idea of his and also of Prof. Max Müller's theory consists in the truth that thoughts cannot walk about like ghosts in bodiless nudity: they are a system of notation. As such they are symbolised in signs and are inseparable from their signs. These signs are sounds with men, and by words we understand usually sound-symbols. But there are other systems of nota-

* That ants communicate with each other through their antennæ is an undeniable fact. But Landois believes that they communicate also through sounds. Some ants possess in their stridulation-organ a kind of a rattle the sound of which, however, is perceptible to the human ear only in the *Ponera* ants.

† See *Three Lectures on the Science of Language*, p. 47. The Open Court Publishing Co., Chicago.

tion besides vocal signs and they are for that reason not less language than speech. We have reason to believe that ants are in possession of symbolical signs and that most of them are communicated through their feelers.

Professor Romanes describes the origin of ideas (in the second chapter of "Mental Evolution in Man," p. 23) in the following way :

"Just as Mr. Galton's method of superimposing on the same sensitive plate a number of individual images gives rise to a blended photograph, wherein each of the individual constituents is partially and proportionally represented ; so in the sensitive tablet of memory, numerous images of previous perceptions are fused together into a single conception, which then stands as a composite picture, or class-representation, of these its constituent images. Moreover, in the case of a sensitive plate it is only those particular images which present more or less numerous points of resemblance that admit of being thus blended into a distinct photograph ; and so in the case of the mind, it is only those particular ideas which admit of being run together in a class that can go to constitute a clear concept.

Professor Romanes calls such a composite picture of sense-impressions as must be supposed to exist in the animal brain "a receipt" and he distinguishes it from "the concept" of man. He says : "Reception means a *taking again*. . . . The word 'receipt' is seen to be appropriate to the class of ideas in question, because in receiving such ideas the mind is passive." By "concept" however he understands "that kind of composite idea which is rendered possible only by the aid of language or by the process of naming abstractions as abstractions."*

We agree with Professor Romanes in the main point, viz. that the process of evolution must be considered as uninterrupted, but we cannot agree with him on several minor points.†

We must express our doubt concerning the propriety of calling the mind passive when receiving impressions. Every single sensation is an active process, just as much as a reflex motion, and it may

*Prof. Lloyd Morgan introduces several new terms, which seem well coined. The mental product which is called the object of sense he calls "construct"; the most prominent feature in a composite sense-image, he calls the "predominant"; and if the predominant is named and isolated by abstraction he calls it an "isolate."

† An impartial criticism of Professor Romanes's position has been made by Prof. Lloyd Morgan in his recent work *Animal Life and Intelligence*.

be considered as a reaction that takes place in response to the stimulus of the impression. Conception of course is also an active process, and concepts, the products of conception, establish a new department in the mind. "Noiré, quoted by Prof. Max Müller, says: 'All trees hitherto seen by me leave in my imagination a mixed image, a kind of ideal presentation of a tree. Quite different from this is my concept, which is never an image.' "* And this is true.

We have on another occasion explained that sensations are sense-impressions which have acquired meaning. † Rays of light are reflected from an object and fall upon the retina of an eye. Here they produce a disturbance of nervous substance which is transmitted to the brain where it is felt as the image say of a tree. Now the ether-waves are not sight, but a certain form of ether-waves corresponds to a certain form of sight, and the latter comes to stand for the former. The mental picture of a tree becomes a symbol for a special object outside of us and it is projected to the place where experience has taught us to expect that object. In naming objects we repeat the process of expressing by symbols. Sensations are symbols, and names are symbols of symbols. The name and concept tree is not the composite picture of all the trees I have seen, but it is the symbol of this composite picture of sense-impressions. Sensations are like the chords of a piano and the concepts are like the keys. The key is different in kind from the chord which belongs to it. When I touch the key the chord will sound: when I pronounce a name the composite sensation of all its analogous memories will be awakened.

* * *

Can there be any question that difference in kind can originate by degrees? Professor Romanes uses the phrase "different in kind" as synonymous with "different in origin" and therefore declares that human reason and animal intelligence are "different in degree"

* This quotation is requested from Prof. Lloyd Morgan, *Animal Life and Intelligence*, p. 325.

† *The Origin of Mind*, in *The Monist*, Vol. I. No. I.

only. The word "kind," it is true, is at least as vague as the word species and a naturalist may often be doubtful where to draw the line. Man and monkey are different in kind, and they are also more different in origin than Carl Vogt assumed, for man is not the descendant of any of the monkey families now existent. But this does not disprove that they are of a still remoter common origin or at least that they originated in the same way in some amœboid form as simple life-substance.

New formations which originate through combining are as much new creations, i. e. things new in kind, as if they were produced through special-creation acts of God which are said to be creations out of nothing and not mere transformations.

Man builds houses out of bricks and timbers. Is not the house something different in kind from the trees and the clay from which the materials have been taken? Is not the boiler of a steam-engine different in purpose and accordingly also different in kind from a tea-kettle? Is not every invention something different in kind? And is not the same true of the products of thought? Is not a triangle something different in kind from a line? And the origin of the former is not more miraculous than that of the latter. A triangle is more complex than a line, but its existence in the mind is not more of a mystery than the existence of the line. Difference in kind need not include difference of origin. Harmony is different in kind from melody. Notes in succession produce melody, while simultaneous notes produce harmony. In either case it is simply a matter of combination.

Professor Romanes when speaking of the passivity of sense-impressions seems to think of the unconsciousness of the process. We are not conscious of the transformation of impressions into sensations while we can become aware of our efforts to change the sense-material into concepts. Yet the nature of mind is throughout activity. And no one has perhaps insisted more strongly on the activity of mind than Prof. Max Müller. But Prof. Max Müller distinguishes between the activity of the mind and the ego which as he supposes performs that activity. He says ("Science of Thought," p. 63):

"We think of a mind dwelling in a body, and we soon find ourselves in the midst of psychological mythology. Let it be clearly understood, therefore, that by Mind I mean nothing but that working which is going on within, embracing sensation, perception, conception, and naming, as well as the various modes of combining and separating the results of these processes for the purpose of new discovery.

"But if Mind is to be the name of the work, what is to be the name of the worker? It is not yet the Self, for the Self, in the highest sense, is a spectator only, not a worker; but it is what we may call the Ego, as personating the Self; it is what other philosophers mean by the Monon, of which, as we shall see, there are many. Let us call therefore the worker who does the work of the mind in its various aspects, the Monon or the Ego."

And in another passage (l. c., p. 552) he speaks of the simplicity of the monon:

"If then the process of thought is so simple as we saw, not less simple, at least, than that of speech, it follows, that the complicated apparatus which had been postulated by most philosophers for the performance of thought in its various spheres of manifestation, must make room for much plainer machinery. Instead of intuition, intellect, understanding, mind, reason, genius, judgment, and all the rest, we want really nothing but a self-conscious Monon, capable of changing all that is supplied by the senses into percepts, concepts, and names. These changes may be represented as something very marvellous, and we may imagine any number of powers and faculties for the performance of them."

"Grant a Monon conscious of itself, and conscious therefore of the impacts made upon it or the changes produced in it by other Mona which it resists, and we require little more to explain all that we are accustomed to call Thought."

The continuity of evolution naturally holds good according to Max Müller for the natural man, but not for the Self.

How is this? Is the monon perhaps conceived as not-natural or outside of nature. Hardly. For Prof. Max Müller speaks of the object also as being a monon.* If the objects are as much mona as the subjects the same laws must hold good for both, and the subject-monon must be supposed to be an object-monon if considered in its relation to other object-mona.

If Prof. Max Müller's protest against the continuity of evolution is not based upon the dualism of natural and extra-natural mona, what can it mean when he says that evolution does not hold good for the Self?

*L. c., p. 281. "So much about the subject or the monon. What now about the objects or the mona?"

If the Self is conceived as a monon, i. e. something "alone" like an atomic unit, it can have no evolution. Evolution is change of form through the production of new configurations. A monon or an isolated unit considered by itself cannot evolve. It is as it ever has been and will be—a monon.

If this is Prof. Max Müller's meaning, we must ask, How does he know that the self is a monon and that objects are mona? Do they not, if so conceived, become highly mysterious entities? New mona are constantly born into this world. Whence do they come? Is every birth of a child the new creation of another monon by the creator, who so distributes the babes in the world that like babes are given to like parents thus producing the wrong impression of heredity as well as of a continuity of evolution? The idea of explaining all the activities of the mind by the postulate of a conscious monon is very simple indeed, but the problems which would arise from this postulate are extremely complex, and it seems to us that after all the proposition of evolution is by far the simplest solution of all the difficulties.*

Mind as we conceive it is the product of evolution. Mind has been evolved in a world which (judging from its product) must be conceived as being freighted not only with energy but also with the

* Prof. Max Müller is a great admirer of Kant and so am I. But it appears to me that we differ greatly in what we accept as the essential teachings of the master; and I grant willingly that Prof. Max Müller has preserved the doctrines of Kant more faithfully than I. I have attempted to modernise Kant. If I am called a Kantian (and I do not object to the name, on the contrary I am proud of it) it is because I proceed from Kant and I attempt to preserve the spirit of Kant's philosophy rather than his doctrines. For the sake of the spirit of Kantian philosophy I have seen myself urged to surrender the idea of the thing-in-itself as something unknowable. Prof. Max Müller has preserved in his philosophy (for such is the *Science of Thought*) the Ding-an-sich theory. Believing in things-in-themselves he must consistently believe in a self or monon, for this monon is nothing but the thing-in-itself of the soul.

I have limited myself in the present article to the principle of continuity in evolution as a point of divergence between Prof. Max Müller and the views defended by *The Monist*. If I attempted at present to enter into the philosophical problem of things-in-themselves, I should be obliged to tax too much the patience of my readers. But as I am convinced that the reason of our difference with Prof. Max Müller concerning the continuity of evolution lies deeper still, I intend to treat the subject of things-in-themselves in a future number.

potentiality of feeling. Mind, as we know it in experience, is no monon, no indivisible unit, but a unitary system of feelings and thoughts produced through external impressions upon one part of the world by the rest of the world which surrounds it. Mind is an abstract term ; it does not denote a part of the world, but a certain quality of a part of the world, viz. the feelings and thoughts of special kinds of organisms. Mind is produced through external impressions, but it does not consist merely of external impressions. Mind, as we have stated before, is not passive ; it is active. It consists of the reactions which take place in response to impressions and also of the accumulated products of these reactions. Thus every mind is the concentrated effect of the whole cosmos upon one special part of the cosmos, not as it takes place in one moment, but as it has taken place in a definite and continuous period up to date. The accumulation of these effects makes the mind grow and expand and the system of the growth constitutes its specific character. We can as little think of the mind as appearing suddenly by an act of special creation as we can think that an oak tree can be created out of nothing or that it can exist without previous growth. The law of continuity holds good as much in the realm of the human mind as in the domain of animal and plant-life.

* * *

So far we have borne in mind the philosophical and scientific aspect only of the continuity of evolution. There is another aspect however of no less importance, that is the religious view of the subject. We do not believe that science and religion are two different spheres of thought and that something may be true in science which is not true in religion. Since the theory of evolution has revolutionised almost all our sciences, we ask, what influence must this change of thought exercise upon religion ? Is not the religious idea of God destroyed and the whole system of religion overturned ?

We think not. An old and very powerful system of theology which has been considered as orthodox for centuries will become untenable as soon as the idea of evolution and the continuity of evolution are recognised in their sweeping importance ; but religion itself will enter into a new phase of evolution and the idea of God

will not be cast aside as a mere superstition of the Dark Ages, it will be purified and appear in a greater and sublimer, in a nobler, higher, and in a truer conception than ever before.

The idea of God is an historical heirloom of past ages. The religious man and the philosopher of all times have tried to put into it their highest, their best, their grandest, and their purest emotions as well as thoughts. And these thoughts were not meaningless, they were not mere fancies. They contained the quintessence of their conception concerning that feature of reality which has produced us as living, thinking, and aspiring beings, and which still prompts us to aspire to higher aims. The world which has produced other beings and ourselves, cannot be and is not a meaningless congeries of material particles in motion. It is a living cosmos. It is a grand harmonious universe pregnant with mind, and nothing in it is suffered to exist for any length of time but that which conforms to its laws; and that which conforms to its laws we call moral.

The idea of God, however, as it is commonly taught in our schools is full of pagan notions, and the very paganism of the present God-idea is often supposed to be its deepest and holiest meaning. No wonder that atheism increases with the progress of science! And why should not atheism increase, if it is truer than a superstitious theism? Atheism I believe will increase more and more until theism is cleansed of its pagan notions. But atheism will not come to stay, for atheism is a mere negative view and negations have no strength to live. They have power to criticise and they will serve as a leaven in the dough. Their purpose is the purification of the positive views. Negations will pass away as soon as their purpose is fulfilled.

The old pagan conception (now considered as orthodox) places God in the dark nooks and crevices of our knowledge. Wherever science fails and wherever our inquiring mind is entangled in problems which we cannot hope to solve, wherever the continuity of nature and of the order of nature is hidden from our intellectual sight, the so-called orthodox believer comes forth and declares: "This is a holy place. Here is the finger of God's special interference!" Consider what a degrading view of God this is! The place of dark-

ness is conceived as an actual break in the order of the world and this break is supposed to be a special revelation of God! If we trust in truth, we need not shun the light of science and the God of science—in contradistinction to the pagan notion of God—reveals himself in the discoveries of science. God lives not in darkness but in light, and his existence is proved not through the breaks in nature (which we can be sure do not exist, and wherever they appear are due to our ignorance) but through the order of nature, for God *is* the order of nature. God is that power through which we exist as living, thinking, and aspiring beings, and to which we have to conform in order to live.

When Darwin speaks of "life as having been originally breathed into a few forms or into one *by the Creator*," he either uses allegorical language or he means that the beginning of life was an act of special creation. He apparently means the latter and is in this respect not a consistent evolutionist. Darwin was great as a reformer of natural science, but in theology he still stood upon the old standpoint. He calls God to rescue where science fails. The Creator did not originally breathe life into the organism, but his breath is constantly ensouling all living beings. Now suppose there were or there could be exceptions to the law of causation, to the conservation of matter and energy, or to the continuity of evolution, would that not rather be a drawback in nature? Are the patches on a coat better proof that it was made by a tailor than the whole coat? Any kind of theology which still recognises special-creation acts, or miracles, or breaks in evolution, we do not hesitate to say, is not yet free from paganism, for it still sticks to the religious conception of the medicine-man that God is a great magician. The God of the medicine-man lives in the realm of the unknown and he appears in man's imagination where the light of science fails. The God of science however is the God of truth, and evidence of his existence is not found in the darkness of ignorance but in the light of knowledge. God's being is not recognised in the seeming exceptions to natural laws, but in the natural laws themselves. God's existence is not proved by our inability to trace here or there the order of cause and effect, as if a disorder in the world made it divine; on the con-

trary the only rational ground of a faith in God is the irrefragable cosmic order of the universe. It is true that we have to give up the idea of a personal God, but is not a superpersonal God greater than the idol which we have made unto our own likeness?

The God of science is perhaps more in agreement with the biblical God than the God of dogmatic theology. The interpretations of biblical passages which are at present generally considered as orthodox are (merely from the standpoint of impartial exegetics) untenable. The first chapter of Genesis has not one word about special-creation acts. Neither the Elohim nor the Jahveh-Adonai account declares that in the beginning there had been Nothing. Both accounts (Gen. Chap. I. 1 to II. 3, and II. 3 et seqq.) agree that God "shaped" the world. The word *barah* (to shape, to form, to make) is nowhere used in the sense of creating out of nothing. The Psalmist says, "By the word of the Lord were the heavens made," which was so interpreted in the New Testament that it meant "by the logos," and the gospel of St. John adds *καὶ θεὸς ἦν ὁ λόγος*, i. e. and the word was God. Logos means rational speech or reason, and the world-reason through which the heavens were made can mean only the cosmic order of the universe. This idea of St. John's thought out to its ultimate conclusions means monism.

There is a common error that scientific progress is dangerous to religion. Scientific progress is dangerous to superstition only. Religion (i. e. true religion) is not based upon our ignorance, but upon our knowledge; it is not a child of the darkness but of the light, and faith far from being a mere belief, i. e. the imperfect knowledge of an opinion for which no proof is forthcoming, is applied knowledge, it is knowledge plus the confidence that this knowledge can be made the basis of ethics and the supreme rule for regulating our conduct in life. The history of religion has been and is still a constant purification of our religious ideas, and the crucible in which the religious ideas are purified is science. We are slowly but constantly progressing toward a high religious ideal and this ideal is a cosmical religion free from the pagan notions so severely criticised by Christ and yet so carefully preserved by the Christian churches. This

cosmical religion will be the religion of science. It will not consist of religious indifference nor of a toleration of any and every opinion as is so often erroneously proclaimed as the ideal of liberalism. On the contrary it will be in a certain sense the most orthodox religion, for its maxim will be to stand on the truth and nothing but the truth. And the truth is not at all indifferent or tolerant. The truth is extremely intolerant and suffers no error beside it, although, as a matter of course, the truth is very tolerant in so far as it sanctions no violence but employs only the spiritual sword of conviction by argument and logical proof.

We have given up the idea of special acts of creation as the calling forth disconnectedly of something out of nothing. We conceive the whole world as an orderly cosmos, well regulated by laws and evolving the forms of life in agreement with its laws. Is there less divinity in a cosmos than in a half chaotic world in which God makes exceptions and counteracts his own ordinances? Is the idea of creation less religious if it ceases to mean an origination of something out of nothing? Is not man at least just as wonderful if evolved step by step out of the dust of the earth through innumerable stages in the long process of evolution as if he were made directly out of clay? And is there less divinity in his soul, is he any less shaped unto the image of God because his growth took place according to natural laws? Natural laws, in the conception of purified religion, of the religion of science, are nothing but the ideas of God, eternal and immutable, and formulated by scientists not on the ground of special revelations but on the ground of the universal and unchangeable, and throughout consistent revelation of God in his works.

* * *

The science of language and the science of life are two important highroads to the cognition of truth. That both sciences will be consistent with each other, that their results will finally be seen to harmonise perfectly is beyond all doubt and also that their bearing upon religious ideas will contribute much to their purification. Prof. F. Max Müller and Prof. George John Romanes are two great scholars, each one is a leader in his own branch of knowledge, and

where they come in conflict, it appears to us, that they rather complement than refute each other. Both are strong Monists, although emphasising different sides of Monistic truth and we feel convinced that their very differences will help us to elaborate more fully and clearly and more comprehensively the great truth of Monism—of that Monism which will more and more be recognised as the cornerstone of science and also of the religion of science.

EDITOR.

LITERARY CORRESPONDENCE

I.

FRANCE.—THE INTELLECTUAL AWAKENING OF THE LANGUE D'OC.

I HAVE never seen mentioned in your periodical publications the *Revue des Pyrénées*; and perhaps I should never have heard of the periodical myself if I had not been in this interesting old city, and if my eye had not chanced on the title of one of the articles of a recent number advertised in a local journal. "Un Ariégeois sénateur des Etats-Unis d'Amérique : Pierre Soulé" was the title that attracted my attention and caused me to procure a copy, which I have found interesting in more ways than one.

The publication is a well-printed quarterly of 150 pages, and has completed some time since the second year of its existence. Its full title is as follows : *Revue des Pyrénées et de la France meridionale, Organe de l'Association Pyrénéenne et de l'union des Sociétés Savantes du Midi*. The founders of the periodical are the late JULIEN SACAZE, a savant much venerated in these parts, and Dr. F. GARRIGOU, its present editor.

The Association Pyrénéenne, of which, as we have just seen, the *Revue* is the organ, is an active and significant organisation. Here are some of its aims. While it recognises the greatness of the Capital, Paris, it advocates decentralisation, by "showing that workers living in the provices are as capable as others, though enjoying less support and funds, to aid in the building up of the great scientific edifice of France." The importance and boldness of this

declaration can scarcely be appreciated by those who have not breathed for some time the excessively monopolistic atmosphere of the French capital, which has been so baneful to so many national interests. The Association would also act as a means of union between the various learned societies of the South, the Midi, and thus render it possible to organise an annual Congress "for the discussion and defense of the grand scientific, industrial, and commercial questions which concern Southern France."

Here we see brought out still more precisely that rivalry between the South and North, characteristic of most nations, and which presents such curious aspects in the past and present history of France.

I never weary of quietly noting, while in the South, the delightful contempt which the *méridionaux* show for their Parisian fellow countrymen. The other day at dinner, for instance, I heard a learned professor of one of the Southern Universities defending the Southern accent and preferring it to "the Parisian accent," as he put it. But I would need pages of your space to develop this line of thought. Suffice it to say here that the Association Pyrénéenne and its organ the *Revue des Pyrénées* intend to prove, and have succeeded in proving, if we may judge by this number of the *Revue* and by the account of the proceedings of the first Congress of the Association, placed at the head of the number, that there are creditable savants and sound learning outside of the walls of Victor Hugo's "Ville Lumière."

Another object of the Association would be dear to Castelar's heart. I give it in full: "To remove morally the grand Pyreneean curtain and to offer the hand of friendship to a nation justly proud of its past, whose interests touch our own, and which has the right, because of the illustrious sons of Catalonia, Aragon, and Navarre, to take part in an intellectual and Pyreneean association based on science." This is a paraphrase of Louis XIV's famous remark concerning the Pyrenees, when he placed his grandson on the throne of Spain. Nor can one be surprised at the strong affection which binds Southern France to the Iberian peninsula. The grand mountains, the "Pyreneean curtain," which separate the two countries, are always in sight, their snow-capped peaks glittering in the sun; the various *patois*, especially the dialect of Pau, resemble the Span-

ish more than they do the French tongue; Spanish money is foisted on you at the shops, and picturesque Spanish mountaineers lend a peculiar charm to the country fairs, while the nation is ever on the eve of a pronunciamiento, destined to give to Spain the republican institutions of France.

But to return to PIERRE SOULÉ who is the cause and starting point of this letter. Commandant Trespaillé's eulogistic biographical sketch is of slight interest to American readers, who can find elsewhere a fuller and more exact account of the brilliant but rather disappointing career of the once famous Franco-Louisiana statesman. M. Trespaillé's reference to "Old Hickory" as "the immortal Jackson," his statement that the American people is full of prejudices against the French race, his metamorphosing New Hampshire's only President into Pierre Francklin, and some other similar slips can be overlooked, for this essay offers a striking example of the dominant idea of the *Revue*, the Association and patriotic Southerners generally,—the glorification of the great men and great actions of the sunny South, the "Midi ensoleillé."

And I must admit, foreigner though I am, that I share much of this enthusiasm for persons and things meridional, and especially for the latter. What a land this is for historical and archæological study! Take this number of the *Revue des Pyrénées*, for instance; it is full of it. Here, for example, are the titles of three of the papers read at the first Congress of the Association Pyrénéenne, to which Congress I referred above: "The Domitian Road from Narbonne to Perpignan," "The Third Century School of Sculpture in Southern Gaul," and "The Roman Road from Narbonne to Carcassonne." There are several articles in the *Revue* about the University of Toulouse, which is stated to be the oldest in France after that of Paris, having been founded in 1229, more than two hundred and fifty years before the discovery of America. The law school even antedates 1229 and its foundation is lost in the obscurity of the early centuries of the Christian era. Another article begins the publication of a list of the professors at the law school. The first recorded name dates from 1251. When one finds such themes as these on every hand, Rome, Gaul, the Middle Ages, and feudalism become almost living

realities. And how inexhaustibly rich Languedoc is in these reminders of the distant past.

And the patois or dialects of this part of France are not the least ancient and interesting subjects for study. Wonder is often expressed that the English of America differs so slightly from the English of England, with three thousand miles of ocean separating the two countries. The wonder increases when you find that here in Languedoc the same patois differs in some particulars from town to town. Let me first mention some big differences and then touch upon some minor ones. If you take the train which leaves Toulouse at about half past eleven in the morning, you will arrive at Pau at half past four. During these five hours on a pretty slow train you have passed from one patois to another. The lower classes of Toulouse cannot understand the lower classes of Pau. And if you continue in the same train, at about half past eight you reach Mauléon, in the French Basque Provinces, where the populace of neither Toulouse nor Pau could carry on a conversation with the populace of Mauléon. Thus a nine hours' ride of about 175 miles on an accommodation train carries you through a region where French is the vernacular of the educated classes and is the official language, but where the great mass of the population is divided into three groups, each speaking a different dialect.

The modifications which the same patois undergoes in neighboring localities is not less curious though of course not so radical. Roughly speaking it may be said that the same patois is spoken from Montpellier to Bordeaux and from Toulouse well up into the centre of France, which embraces the region where prevailed the *Langue d'oc* from which the present patois is derived. But, while a peasant could make himself understood throughout this wide territory, his ear would often be perplexed by more than one strange word and phrase. I was once told on the Riviera that the patois of Menton differed considerably from that of Nice and that this was particularly the case before the construction of the Corniche road and the railway, when a denizen of the former place could reach the latter city only by doubling Cape Martin under sail. I do not know how true this statement is, but I believe it to be correct, after a superficial study

on these same lines which I have just made in the Department of the Tarn, one of the most isolated portions of Upper Languedoc. I find that the patois of towns as near together, as are New York, Newark, Patterson, Nyack and Tarrytown, for example, differs, not, perhaps, in its construction but in its vocabulary. Let me give some examples. Thus, potato, which is *truffet* at Cordes, becomes *truffo* at Castres. *Patano*, the word employed in the South East end of the Department is also heard at Castres, but never at Cordes, which is in the North West end of the Department, Castres being about in the centre. Dog is *cagnot* and *có* at Cordes, and *gous* at Castres. (At Montpellier, in a contiguous Department it is *tschi*, while at Pau they say *can*, which approaches very near the Latin.) Pig is *pourcel* at Castres and *tessou* at Cordes. Broom *engranicro* at Castres and *balatso* at Cordes. I have also noted the following difference between the Tarn patois and that of Pau. The *f* of the former always becomes an aspirated *h* in the latter. Thus, *femo*, woman (Castres) is *henno* at Pau; *fourco*, pitchfork (Castres) *hourco* (Pau); *foun* fountain (Castres) *houn* (Pau).

A comparison of this patois with the French as regards the spelling of geographical names reveals a fact that would somewhat dampen the ardor of our friend Colonel Shephard, of New York, in his effort to force the gazeteers to give geographical names as they are written in the countries where they are found. One might have thought that such near neighbors as the Langue d'oil and the Langue d'oc would have come to some rational understanding on this point and that the Ile-de-France would have accepted the spelling of Languedoc. But not so. The towns and rivers of this part of France look as different in French and patois printed pages and sound as differently when pronounced by educated and peasant mouths, as do the towns and rivers of Italy when seen in Italian and English books or when spoken by Americans and Italians. Thus Toulouso became Toulouse; Castros, Castres; Dourgno, Dourgne; Carcassouno, Carcassonne; Narbouno, Narbonne; Billofranco, Villefranche; Labaou, Lavaur; Bibiers, Viviers; Boou, Vour; Abrayrou, Aveyron; Cordos, Cordes, etc.

These patois, these dialects of the old Langue d'oc, are awakening

just now increasing interest in the literary circles of the Midi, for it is only within recent years that the French has appeared to threaten their extinction. The spread of the railroad system and especially the wide development of the primary school since the advent of the Third Republic, are dealing deadly blows at these popular dialects. But they are still far from moribund. I have frequently been told that even to-day one stumbles now and then on old peasants living up in the isolated Black Mountain, a spur of the Cévennes, and which divides Upper from Lower Languedoc, who cling to *oc*, although *obe* or *ope*, or the French *oui* and *si*, are the common affirmative particles of the patois.

It has often happened to me when taking a constitutional to ask my way and discover that I am addressing a person who neither understands nor speaks French, though, as a rule, all peasants understand French and the vast majority can speak the language too, but after a rather sorry fashion. A foreigner finds at least one comfort in all this: in Languedoc he uses the national tongue more correctly than thousands of native born Frenchmen! Nor is the knowledge of patois confined to the peasantry or the working classes of the towns. The *bourgeoisie*, with exceedingly rare exceptions, are quite at home in it, and the children of the nobility often prattle with their peasant nurse more easily in patois than in the polished speech of their parents. During a political campaign, it is a very common thing for a would-be deputy to address country voters in their familiar dialect, thereby gaining the favor not alone of the *félibres*; while, during this same period of electoral excitement, the local papers publish almost daily editorials written in patois. In hundreds of rural churches the short sermon after early mass is preached in patois, and many a time I have found myself turning with surprise when I heard French spoken in the streets of Languedocian towns of considerable size.

There was a time when the government and the ruling classes of Languedoc itself strove to eradicate these dialects and to substitute French for them. The aim was a patriotic one; greater national unity, it was believed, would thus be secured. But that period has gone by, and at present there is a strong tendency to preserve from destruction these linguistic souvenirs of a rapidly fading past. What

the enthusiastic *félibres* would do for Provençal, they and their disciples and imitators in Languedoc would do for the dialects of South Western France. At the Congrès d'Études Languedociennes, held recently at Montpellier, one of the members proposed that the French language should be taught in the primary schools through the medium of the langue d'oc. The suggestion is not so chimerical as it appears to be at first blush, for one of the greatest and never-ending difficulties of the country schoolmaster in this part of France is to teach his scholars the three R's by means of the French, which is a foreign tongue to ninety-nine out of a hundred of them. One is not surprised, therefore, to find that one of the resolutions passed by this same Congress takes up the plan proposed in the paper just referred to, and declares in favor of "the utilisation of the langue d'oc for teaching French in the primary schools."

At a recent sitting of the General Council of the Bordeaux University a resolution was passed calling for the creation of a chair of "Southern languages." In explanation of this term, the *Gironde*, the leading Bordeaux newspaper, says: "Besides giving instruction in Spanish, one of the labors of the professor would be to teach our South Western dialects in which the most important historical documents of this part of the country were drawn up during several centuries." The editor then goes on to say: "If the State does not feel able to found this chair, will not some private individual come forward and imitate the example of James E. Clark, who recently established at Worcester, Mass., a university endowed with a capital of \$12,500,000?"

Speaking of primary schools reminds me of a curious fact which has frequently attracted my attention in Languedoc this winter. In no other part of France perhaps was it so common for a town to grow up around a castle; for this region was terribly harried by the Wars of Religion, and the poor peasants were forced to seek the protection of some lord. In order to render them more impregnable, these castles were generally built on some high hill. So now one sees on every hand decaying hamlets surrounding ruined castles left almost deserted on the very crown of some pyramidal mount, while the busy town of to-day has descended to the more accessible base

of the hill. But since the advent of the Third Republic and the grand impetus given to primary instruction, these abandoned castles have taken a new lease of life, and been converted into school buildings. The other day during an hour's drive in Upper Languedoc I saw two of these old useless feudal piles consecrated to popular nineteenth century education. What a train of reflections is thus suggested! Within the very same walls where some proud ignorant seignior once lorded it over his humble vassals, the descendants of these serfs, still speaking the tongue of their oppressed ancestors, but enjoying all the liberties then usurped by their masters, are now being instructed in branches of knowledge of which the feudal knight had scarcely an inkling. What a revolution was that of '89!

THEODORE STANTON.

II.

GERMANY.—RECENT PUBLICATIONS IN THE DOMAIN OF PATHOLOGICAL PSYCHOLOGY.

The science of anthropology claims, as we know, to have discovered, that the various epochs of history are marked not only by characteristic religious, political, social, and literary conditions, but not unfrequently also by particular forms of disease; and it is the opinion of eminent medical authorities that nervous and mental diseases constitute the "pathological feature" of modern civilisation. This, of course, is not to be understood as meaning that diseases of this character have not appeared in previous epochs, but simply that they occur with unusual frequency at the present day and in unusually grave forms.

A book treating of the affliction of the age ought to count on a large circle of readers, and it will be all the more deserving of such if it thoroughly and skilfully fulfils its purpose of holding up the mirror to the time and of imparting the light and advice required in this matter. This has been done in an excellent manner by the work of the Bremen alienist Dr. SCHOLZ, entitled *Die Diätetik des Geistes—Ein Führer zu praktischer Lebensweisheit*, which has just appeared in its second and enlarged edition, Leipsic, E. H. Mayer. This book is distinguished from the majority of similar recent publications intended for a greater public by its relative thoroughness. It must be characterised as thorough and comprehensive, also, in comparison with the older and more celebrated work, which its title at once suggests, FEUCHTERSLEBEN'S *Diätetik der Seele*. The character of the book is not "purely psychological," overlooking the high importance of the influence of the body, as was the case with Beneke; nor does it lean towards the moralising of a Heinroth and Ideler; nor does the author treat his subject from an exclusively medical point of view: the work, in fact, is anthropological in character. Its contents possess chiefly in two respects great interest: (1) from a universal human point of view, in that it affords us a

glance into the awful abysses of life, in the company of an expert guide who tells us how these depths are to be avoided, or at least gives consolation to those whose way leads necessarily through them; and (2) from a pedagogical point of view, in that it directs attention to the heredity of the morbid constitutions and abnormalities that oppose obstacles to education or may become such if improperly treated.

It is obvious that morbid mental dispositions must be taken into account in all work of education and instruction, if we wish to avoid an egregious violation of the universally recognised requirement to regard individuality. And from this point of view the book of Dr. Scholz will awaken in readers who have anything to do at all with education, the desire to learn more about the nature of morbid mental life in the young than is presented in this treatise destined for a large public.

Such a wish would have had to remain unsatisfied six years ago, when the *Diätetik des Geistes* first appeared. It is true, English physicians particularly, like West, Conolly, Maudsley, and others, had a long time previously directed attention to the morbid phenomena of infant psychic life, but their work, like that of their French and German professional associates, lies buried in medical magazines and volumes not easily accessible. The first to apply himself to the work needed in this condition of affairs was Professor EMMINGHAUS, who digested and collected all the material, thus supplied, in a compendious work bearing the title *Die psychischen Störungen des Kindesalters*; Tübingen, Laupp, 1887. The fact indeed is not to be left unrecognised that the book, in so far as it may be used by those who have not had a medical training, possesses two defects,—defects, however, for which the author cannot be censured. In the first place, it is intended for physicians only, and is therefore, on account of the many technical terms it uses, at times not uniformly intelligible. To the serious student, however, who possesses the previous psychological and physiological knowledge most indispensable, it presents no difficulties of too great magnitude. The second defect likewise springs from the purpose of the work. It consists in the fact that, excepting a few occasional references and

hints, the pedagogical aspect of the question is not considered. Pedagogists, here, are confronted with a problem which must be solved, and of which the solution will certainly not be a thankless task. The writer of these lines has approached one aspect of this question in a treatise of his entitled *Nervosität und Mädchenerziehung*, Wiesbaden, 1890, in the course of which study he has arrived at the conviction that an important factor is lacking in modern pedagogics and the training of teachers. This conviction he has put into words in another treatise, *Geistesstörungen in der Schule*, Wiesbaden, 1891, with what success it remains for the future to say.

Two years after the appearance of Emminghaus's work a translation was published in Germany of a French book of a similar character. *Der Irrsinn im Kindesalter*, by Dr. PAUL MOREAU, authorised edition by Dr. Demetrio Galatti, Stuttgart, 1889, Ferdinand Enke, publisher. Unfortunately, Moreau, as his own preface reveals, did not know, when he wrote his book, of the existence of the German work,—a circumstance that has not been without regrettable consequences. Taken in conjunction with the work of Emminghaus, however, Moreau's book possesses, on account of the numerous morbid cases it gives, a high value; although it cannot bear comparison with the former work in richness of material and familiarity with the literature of the subject, and much less so in the psychological treatment of the subject, where Emminghaus is incomparably subtler and more profound.

A treatise that is closely related, in point of subject-matter, on the one hand to the works of Emminghaus and Moreau, and on the other to the books of Preyer (*Die Seele des Kindes*) and Perez (*Les trois premières années de l'enfant* and *L'enfant de trois à sept ans*) on the development of children, has just been published by a Leipsic teacher under the title of *Die Periodicität in der Entwicklung der Kindesnatur, Neue Gesichtspunkte für Kinderforschung und Jugenderziehung*, by GUSTAV SIEGERT, Leipsic, 1891, R. Voigtländer. The author endeavors, in a very interesting manner we must admit, to show that, in the development of the child, lasting states in regular alternate succession occur of mental and physical buoyancy on the one hand and depression on the other, of moral exaltation, likewise,

and moral subsidence. The fundamental cause of this periodical alternation, of the general existence of which numerous proofs are adduced, is supposed to lie in the alternate strengthening and relaxation of the individual's forces of action, brought on by the expenditure and reproduction of energy; additional determinative causes, accelerative as well as retardatory, are found in intercourse with the world and with other human beings. We may call the former the individual and the latter the social cause of the phenomena of periodicity. In the application of his results to juvenile education the author arrives at some far-reaching propositions of reform, the consideration of which, however, we shall have to leave to the pedagogical press.

We shall have to preserve the same attitude with regard to a new work of the well-known Leipsic professor Dr. STRUMPELL—*Die pädagogische Pathologie oder die Lehre von den Fehlern der Kinder*, Leipsic, 1890, Verlag von Georg Böhme Nachfolger. We must refer here to this otherwise highly deserving book only in one respect, where we have occasion for censure. The author does not in his expositions sufficiently take account of the intimate connection between physical and mental phenomena, and the consequence of this is among other things that he excludes pathological mental conditions (the physical causes of which he is forced to admit) as a matter of principle from the pedagogic system and consigns them entirely into the charge of the physician. In our treatise mentioned we have explained why this is not allowable, as well as, in addition, what portion of duty devolves on the teacher in the consideration of these pathological mental conditions. Strumpell's mistake springs from the fact that he conceives with Herbart the essential object of education to be intellectual culture. Allowing that Herbart cannot be taken to task for entertaining this conception, we may yet demand of Strumpell the recognition of the results of recent physiological psychology to the extent at least of perceiving that psychical and physical phenomena are *one* if not the *same*. Even the opponents of Monism dare not overlook this truth,—a truth moreover that admits very well of reconciliation with the Herbartian pluralism to which Strumpell is devoted.

We might cite here numerous pathological conditions of mind that very plainly spring from physical causes and to which the instructor has to give attention just as much as the physician. Instead, however, of citing particular cases, we will refer to three little treatises that are in the highest degree instructive on this point, not only for teachers exclusively but also for all who have to do with children. Dr. MAXIMILIAN BRESGEN, specialist in diseases of the nose and throat at Frankfort on the Main, has published at the house of Leopold Voss in Hamburg (1890) a brochure entitled *Ueber die Bedeutung behinderter Nasenathmung nebst besonderer Berücksichtigung der daraus hervorgehenden Gedächtniss- und Geisteschwäche*. A treatise of like character is that of Dr. med. LENZMANN of Duisburg, entitled *Ueber den schädlichen Einfluss der behinderten Nasenathmung auf die körperliche und geistige Entwicklung des Kindes*, Bielefeld, 1890, Anders Verlag. Both treatises contain, among other things not to be considered here, instructive examples of the rise and disappearance of that morbid mental condition to which Hack first directed notice in Germany but which elsewhere became known through the researches of the Dutch physician Guye by the name of *Aprosesia nasalis*. The third treatise is by Dr. med. RALF WIECHMANN, specialist for nervous diseases at Brunswick, and bears the title *Eine sogenannte Veitstanzepidemie in Wildbad*, Leipsic, 1890, Verlag von Georg Thieme. By St. Vitus's dance (Ger. *Veitstanz*) we understand the disease of which the well-known symptoms are involuntary muscular twitchings usually accompanied by severe or light psychical disturbances, known in medicine by the name of *chorea minor* and *chorea rhythmica*, and sometimes occurring in epidemics. At the school in Wildbad the number of the afflicted children rose in the course of time to twenty-six. Wiechmann expatiates at length in his book on the character of the contagion, and arrives through an exhaustive use of the existing literature on the subject at the result, that there was present in the individual children attacked substantially a physical predisposition, an unstable nervous system. As the first children attacked were not removed, the convulsive motions were seen and perceptually taken up by the other children, who were just approaching the period of puberty and labored under

hereditary predispositions. "Once these images had entered perceptually into the unstable brain, they became competent to operate as stimuli and to be translated into involuntary muscular motions."

The conclusion of my letter may be taken up with the discussion of a treatise that deserves a somewhat more detailed consideration. The director of the Royal Württembergian State Insane Asylum at Zwiefalten, Dr. F. L. A. KOCH, who already possesses eminent repute in the domain of psychiatry, has just published the first part of a new work called *Die psychopathischen Minderwertigkeiten—Erste Abteilung: Einleitung, Die angeborenen andauernden psychopathischen Minderwertigkeiten*, Ravensburg, 1891, Verlag von Otto Maier. In this work the author extends the development of the ideas he some time previously outlined in his *Rudiments of Psychiatry*, second edition, 1889. In the expression "psychopathische Minderwertigkeiten" (psychopathical secondary factors) Koch embraces all those psychological irregularities, be they natural or acquired, affecting the life of the human personality, which though in the severest cases even not amounting to actual mental disorders, yet in the most favorable instances so affect the persons afflicted with them that they appear as lacking the full possession of mental normality and capacity. Primarily, of course, the treatise is intended for physicians, and the author counts on the gratitude of this profession in so far as he has undertaken to put in independent form the separate facts formerly scattered over the whole domain of psychiatry, to free them from other neuro- and psycho-pathological subjects, and to unite them into one special group of pathological states. But the author also counts on his book being used by the representatives of other professions, by pastors, tutors, teachers, jurists, sociologists, historians, and the like, and indeed with perfect justice.

The savers of souls, if they had mastered to a slight degree even the comprehension of the psychopathical secondary factors, would be astonished to see how many people there are in the case of whom medicine is more effective against "spiritual" vexations than pastoral advice, and that often such advice, being one-sided and starting from false assumptions, does harm only. They would see in the peculiarity of the religious needs and tribulations of many

a man a psychopathological abnormality; they would come to understand how the otherwise unintelligible badness of many another has its source in a pathological basis: they would not regard and hail as absolutely good, moreover, many "good impulses";—all this they would find out if they had learned to note and comprehend what the import is of such persons being descended from neurotic ancestors, of their exhibiting palpable indications of degeneration, and having also perhaps insane, idiotic, whimsical, and epileptical brothers and sisters. They would furthermore perfectly comprehend, that in the case of people who are descended from healthy parents, but who from being in times past happy and joyful Christians are now struggling with distractions of soul, it were often better first to inquire after the state of their organs of digestion. And they would be able to deal quite differently from formerly with many a soul entrusted to their care, perhaps also more easily to conquer, or at least to endure, some secret burden of their own lives. The import of the book for the educator is easily inferrible from the remarks made. For the jurist, who has to deal with the problems of accountability and the administering of punishment, its importance is manifest. Sociology, too, the deeper it enters into its problems, will not be able to dispense with psychopathology, and in this field it is precisely the psychopathical secondary factors that eminently demand attention. In that which concerns its connection with history we need only mention the names of Lombroso, Emminghaus (*Allgemeine Psychopathologie*) and Möbius (*Rousseaus Krankheitsgeschichte*), to point out the importance of a work like that before us. We recommend it without reserve to all whom it touches.

Altenburg, July, 1891.

CHR. UFER.

ÉMILE LITTRÉ.

SOME debts there are that make the debtor proud ;
So ours to him, who could philosophise
With common-sense, and sweep from starry skies
The brain-spun webs that darken like a cloud.

We loved him, for his highest thoughts avowed
Our own akin and less than ours allies ;
Born of the common soil but born to rise
And light the labor of the laurel-browed.

Justice he traced to truth ; morality,
Back to the brutish primal needs of man ;
And stood himself for all the best might be.

He wrought in words, a faithful artisan ;
And lived to shame their loutish mockery
Whose virtue ended where his own began.

LOUIS BELROSE, JR.

DIVERSE TOPICS.

THE ORIGIN OF THOUGHT-FORMS.

DR. H. POTONIÉ, the editor of the *Naturwissenschaftliche Wochenschrift*, Berlin, advances in one of its recent numbers (Vol. vi. 15) the following proposition concerning the origin of the forms of thought: "All the forms of thought have originated in the struggle for life not otherwise than the forms of organisms." This is further explained in the following sentence: "Those conceptions which are called *a priori*, are inherited; they have been necessarily used by the primitive thinking organisms and are now in their disposition immediately present. Yet they have been gained by experience. Without any knowledge, for instance, of space and time, no action is possible; accordingly their conception is perhaps the oldest and therefore it appears aprioristic."

I. THOUGHT-FORMS AND THE FORMS OF EXISTENCE.

We agree with Dr. Potonié that thought-forms grow naturally and that they grow such as they are, of necessity. In our opinion formal thought, with its so-called *a priori* theorems, is derived from the thought-forms by abstraction. (See "Fundamental Problems" pp. 26-60, the chapter Form and Formal Thought.) If it had been possible for other thought-forms to have originated together with those which we possess at present, and it may be parenthetically remarked that we do not consider it as possible; but *if* it had been possible, we do not deny that all the other thought-forms would have gone to the wall, they would have perished in the struggle for existence and our present thought-forms alone would have survived. In this we agree with Dr. Potonié, and a naturalist may be satisfied with this statement, because it suffices for his purposes. The recognition of the objective validity of the laws of formal thought is all that the specialist wants for this or that branch of science. But this recognition is not sufficient for the philosopher. He has to understand the problem why the subjective laws of purely formal thought possess an absolute and an objective validity for the world of real existences. He must understand not only how thought-forms originated, but also why and on what ground the laws of formal thought are considered as necessary and universal truths. The question of their

origin and growth is of secondary importance compared with the question of their rigidity and apriority.

Mr. Herbert Spencer has made the same proposition as Dr. Potonié and his view briefly expressed is this: "The laws of formal thought are *a priori* to the individual, but *a posteriori* to the race." In other words apriority must be explained by heredity. A dog cannot count, because none of his ancestors have ever counted, but a child has the faculty to learn counting because innumerable ancestors of his have counted and his brain possesses a predisposition to learn counting easily. Concerning our apprehension of space-relations which expressed as mathematical theorems appear to us necessary and are called *a priori*, Mr. Spencer says:

"We cannot think otherwise because during that adjustment between the organism and the environment which evolution has established, the inner relations have been so moulded upon the outer relations that they cannot by any effort be made not to fit them. Just in the same way that an infant's hand, constructed so as to grasp by bending the fingers inwards, implies ancestral hands which have thus grasped, and implies objects in the environment to be thus grasped by this infantine hand when it is developed, so the various structures fitting the infant for apprehension of space-relations, imply such apprehensions in the past by its ancestors and in the future by it self."

Man's ability to learn counting is inherited, and there may be more or less of it in different people. Mathematical talent is inherited just as much as musical talent or other faculties. But the philosophical question concerning the apriority of mathematical theorems has nothing whatever to do with the origin of mathematical talent. When Mr. Spencer declares that apriority is but an inherited aposteriority, this is equivalent and is intended to be equivalent to an actual denial of all apriority. His very explanation proves that he does not see the real problem, and in the same way Dr. Potonié overlooks it entirely. The philosophical problem of the apriority is not an historical problem, it cannot be solved by tracing the evolution of thought-forms. The philosopher does not ask how did thought-forms originate, but why do we attribute to the laws of formal thought necessity and universality and on what ground can we justify our assumption?

Mr. Spencer compares our apprehension of space-relations to our inherited habit to grasp with our hands and to walk with our feet. This comparison is misleading and inappropriate. That we grasp with our hands and walk with our feet is incidental. There are animals who have developed other limbs for the same purposes. There are monkeys who grasp with their tails and the elephant grasps with his nose. There is no necessity and no universality in our predisposition of grasping with our hands. Yet there resides necessity and universality in the laws of formal thought so that wherever animals develop rational thought we are sure that to them twice two will always equal four just as much as it does to us. However they may be different in other respects: they may be winged creatures or may be somewhat like our ants, they may have developed other bodily structures than we can dream of, nevertheless their arithmetic, their logic, and their mathematics will in all essentials be exactly the same as ours. There are animals whose thought-forms

are not as highly developed as in man, but there are no animals in whom they are developed differently. We must consider it as impossible even that on other stars rational creatures can be found whose reason differs from ours. To them also twice two will be four.

II. THE PROBLEM OF APRIORITY.

Kant did not call the formal laws *a priori* in order to characterise them as innate ideas, but simply to denote that their validity is necessary and universal. If I have to walk twice a distance of two miles, I know "beforehand" (i. e. *a priori*) that I shall have to walk four miles—even before I have made the actual experience. And this wonderful quality of giving information beforehand is characteristic of all the laws of formal thought. It is certain that our ability of applying the laws of formal thought has been acquired by experience in the race as well as in the individual. But their necessity has to do with experience in so far only as its recognition is the indispensable condition of all methodical experience—i. e. of science. The laws of formal thought and our recognition of their necessity and universality (alias, "apriority") are the organ of any and all scientific cognition. The methods of the sciences are exact measuring and counting based upon the faith that the laws of measuring and counting are unalterable and unfailingly reliable. We know beforehand that they will hold good for all possible cases.

Our experience of millenniums suffices to prove that the laws of formal thought agree with the laws of actual existence, and Kant's view to consider them as merely subjective and not objective appears to me untenable. We may fairly consider Kant's subjectivism as a thing of the past. And the agreement of the forms of objectivity with the forms of subjectivity is easily explained when we bear in mind that the thinking subject is a part of the objective world. It is but natural that the forms of existence are impressed upon the thinking subject as forms of thought.

Yet the question of the necessity and universality of the laws of form remains. Can we comprehend why the form of objective reality as well as of subjective thought must be such as they are, and might they not just as well be different? Is this question legitimate and can it be answered? We say Yes, the question is legitimate and can be answered.

All the laws of formal thought are products of thought-operations which are based on no other principle than that of identity ($A = A$). As soon as thinking beings have developed to that degree of thought-ability in which they are able to deal with the abstract idea of pure form, they can make constructions of pure forms. So long as these constructions of pure forms are made consistently and correctly (i. e. in strict agreement with the principle of identity), they will be found to hold good in reality and we can *a priori*—before we have made the actual experience—rely on their applicability.

The laws of pure forms (forms of thought as well as forms of existence) can satisfactorily be proved to anyone who acknowledges the principle of identity. The

principle of identity is not an assumption but it is the generalised statement of the simplest thought-operation, which, if employed with consistency, can serve as a rule for other and more complex thought-operations. Consistency is the condition of thought. Consistency produces order, and order is the most characteristic feature of thought. We create some pure form in some definite way, for instance in counting we posit a unit (we call it "one"). Now we create in the same definite way again a pure form, we again posit a unit (we again call it "one"). In so far as these two "ones" are the product of the same operation they will be the same and we express this truth in the sentence $1 = 1$ or $A = A$.

When, for the sake of assistance in the process of abstract thought, we use real objects to represent our pure forms, similarly as an abacus is employed for assisting the young mind of a child in learning arithmetic, the dissimilarity of the objects is of no account. The proposition of their identity has no reference to the material objects, but to the operation. Two operations being according to some special and definite method exactly the same, their products are also exactly the same, and the rest is not to be minded, because we have in our abstraction purposely excluded everything else.

Here is not the place to show the palpable advantages of the methods of abstract thought and especially of the abstract thought-operations with pure forms. It is sufficient to characterise its main principle of procedure. We may also parenthetically remark that from our position we are no longer in need of axioms either in mathematics or in any other formal science. The data of formal sciences are certain mental operations, viz. positing pure forms, and combining, separating, and recombining them. The subject-matter of formal sciences consists in the products of these operations. To formulate some of the simplest products in axioms is a mistake which has been pointed out by Hermann Grassmann in his *Ausdehnungslehre*.

We are struck and overawed with the cosmic order of all natural phenomena which, as science teaches, is produced through the rigidity of the formal laws of existence. The planetary system with its regularity of motion which in spite of its many complications has been formulated by Kepler in most simple laws is an object of wonder to us. This order of nature is the same order as the grand harmony that prevails in mathematics and all the other formal sciences. The most complicated laws of both, forms of nature and forms of thought, are nothing but generalisations of special applications of the principle of identity in some kind of action that takes place. While the order of the objective world excites our wonder we can understand the order of the subjective world of thought-forms and know that, being the product of certain mental operations according to the principle of identity, it must be a matter of course. Thus the intrinsic necessity of the laws of our thought-forms gives us a clue to the intrinsic necessity of the laws of nature.

III. CONSERVATION OF MATTER AND ENERGY, AND CAUSATION.

The law of the conservation of matter and energy is nothing but an application of the principle of identity to nature as a whole. And the law of cause and effect is again a corollary only of the law of the conservation of matter and energy. The law of causation is a formula which maintains that there is identity in difference. Some motion produces a change of form. There is accordingly a different state after the motion than before. Yet the total amount of matter and energy remains the same. This is the identity in the change. David Hume and with him John Stuart Mill and the empiricists misunderstood the problem of causation. Instead of considering cause and effect as one continuous process that should be analysed, they considered cause and effect separately and attempted a synthesis. In addition to this mistake, causes as well as effects were defined to be objects. Hume says cause and effect are objects following one another. Cause however is a process; it is a motion, a change that takes place, an event that happens; it is not a thing. And effect is the product of such a process. Effect is a special form, a special state of things, a special configuration, but not the material of which this configuration consists. A certain poison introduced into the stomach of a living being produces certain motions in the bowels, called cramps, which may finally prove fatal. One change produces other changes and their product is a new state of things which is accompanied with pain and ends in death. It is wrong to call strychnine the cause and a dead mouse the effect. But if we call strychnine the cause and a dead mouse the effect, we must forever despair of solving the problem of causation by a reduction to the principle of identity, for strychnine is not at all identical with a dead mouse. No cause is the same thing as its effect, and we can by no means identify cause and effect. And yet the principle of identity holds good. The identity in causation is the conservation of matter and energy in a change of form.

It has been maintained that the law of cause and effect could never be proved; it is either an innate idea prior to experience (Schopenhauer and Schopenhauer's interpretation of Kant) or it is an assumption derived from experience of which (since experience is not as yet exhausted) we cannot know whether it will hold good forever (J. S. Mill). In contradistinction to these views we maintain, that the law of cause and effect can satisfactorily be proved to anyone who accepts the principle of identity. So far as the principle of identity is recognised, all the formal laws are unequivocally determined, or popularly expressed they are as they are, they will remain so and cannot be otherwise, they are necessary. All the determining factors and also the procedure of an operation are set forth, no unforeseen events are possible, for the non-formal elements are excluded, and therefore the result will be in one case just as it is in any other. Thus it can *a priori* be stated that formal laws will always hold good.

The question has been raised: Whether or not our knowledge of the apriority of formal laws is independent of experience. We answer: In a certain sense it is

dependent upon experience, in another it is not. Historically and evolutionarily it is dependent upon experience. A store of innumerable experiences has to be gained before a rational creature will be able to make the abstraction of pure forms. As soon as this stage is attained, man possesses a world in himself. He can now experiment within himself with mental images, for instance with numbers; he can calculate. His mental operations with pure form are called "pure thought" and "pure thought" is now opposed to "experience through the senses." The word "experience" accordingly is used in two ways; it has a broad and a narrow meaning. In its broad sense it means any acquisition of knowledge generally, in its narrow sense it means knowledge acquired through the sense-activity alone. Our knowledge of the apriority of formal laws rests upon experience in its broad sense, but not upon experience in its narrow sense. We can never derive the idea of necessity from sense-impressions. John Stuart Mill in rejecting innate ideas saw no other way than to derive the formal laws from experience (taking here experience in the broad sense). Yet he did not make a distinction between formal thought and sense-experience. He considered the nature of sense-experience as typical for all experience. And thus, again, taking experience in the narrow sense of the term, he was from his premises perfectly justified in rejecting the idea of necessity. If the process of cause and effect is really a synthesis of two things represented in two different sense-impressions following each other, then indeed we have no guarantee that the same sequences will always be observed; and there may be worlds in which the law of causality does not operate. Mill saw all the consequences of his mistake, he conceded freely that we are not justified in assuming that twice two will always be four: many thousands of experiences are in its favor, but we cannot be at all sure that no case will ever happen in which twice two makes five.

The ideas of causality and of the conservation of matter and energy are not derived from experience in the narrow sense of the word, not from sense-experience, but from experience in the wider sense of the word, i. e. from sense-experience arranged with the assistance of formal laws. We should not forget that mere sense-experience exists only in our abstract thought. In reality all sense-experience is relational, it is inseparable from its form. Form and the laws of form are not something purely mental which is transferred to the world of reality, form is something real, it is objective, it is a quality of the facts and the thought-forms of mind are a part and a product of the formal structure of the universe.

The ideas of causation and of the conservation of matter and energy are not prior to experience, they are a part of experience, i. e. experience in the wider sense. They are not part of the sense-experience, but the results of our experiments with purely formal thought-operations, and being the vital instrument or organ of cognition they are the condition of all methodical experience.

IV. WHY IS MR. MILL'S PROPOSITION UNTENABLE?

In practical life we all expect that 2×2 will under all circumstances make 4, and not 5. We reject Mr. Mill's idea that there may be even a possibility of the latter. Is our expectancy really due to a *posteriori* experience which having been repeated so often in the lives of our ancestors is now so firmly rooted in our minds that we imagine it to be necessary and *a priori*? No! certainly not. The experiences of our race in the struggle for life has produced our ability of thought, but it has nothing to do with the apriority of the products of formal thought-operations. A statement of formal thought such as "twice two makes four," cannot be compared to statements of sense-experience such as that sugar has a sweet taste. There may be a moment in which the taste of sugar will be bitter to our tongue. This is quite possible. But to say that twice two might in the future or in any other world, as Mr. Mill maintains, make five is nonsensical, and the possibility of this assumption cannot be placed in one line with the possibilities of extraordinary and exceptional sense-experiences.

What does "twice two makes four" mean? Two means $1 + 1$, and twice two means $1 + 1$ plus $1 + 1$. This sum is called "four"; and what we call five is $4 + 1$. To maintain that the operation 2×2 might produce the result 5, is to admit conditions which have been excluded. Pure forms are not like animals which multiply; they are and remain such as they have been posited. When we put two amoebas into a glass and then add two other amoebas, it is quite possible that in the mean time one of the first set has divided into two. In that case we would have five amoebas. But the operation 2×2 cannot breed any additional units, so as to produce a greater number than the sum of $1 + 1 + 1 + 1$. Nor can we let any of these units disappear into naught, so as to produce the result 3, without committing some inconsistency in our thought-operations, for the products of our thought-operations are rigid and must remain such as they have been posited. They are not animals blessed with fertility but pure forms and nothing but pure forms.

How could Mr. John Stuart Mill overlook so palpable a contrast as that between formal knowledge and sense-experience? He was apparently prejudiced against the term "*a priori*," which as we freely confess is a very poor and inadequate expression. Mr. Mill himself states the cause of his prejudice in his autobiography. He says:

"There is not any idea, feeling, or power, in the human mind, which, in order to account for it, requires that its origin should be referred to any other source than experience."

Mr. Mill was justly exasperated against anything *a priori*, for in his time, it had become customary among certain philosophers to classify all pet superstitions which could not be proved by experience as *a priori*. Mr. Mill continues:

"Whatever may be the practical value of a true philosophy of these matters, it is hardly possible to exaggerate the mischiefs of a false one. The notion that truths external to the mind may be known by intuition or consciousness, independently of observation and experience, is, I am

persuaded, in these times the great intellectual support of false doctrines and bad institutions. By the aid of this theory every inveterate belief and every intense feeling, of which the origin is not remembered, is enabled to dispense with the obligation of justifying itself by reason, and is erected into its own all-sufficient voucher and justification. There never was such an instrument devised for consecrating all deep-seated prejudices."

We appreciate the cause of Mr. Mill's prejudice, but we cannot agree with him. And Mr. Mill is mistaken when he imagines that a rejection of apriority will abolish false doctrines and superstitions. On the contrary. The recognition of absolute necessity based upon the universality of formal thought will alone be a safe basis of science through which we can reject *prima facie* the wrong pretensions of superstitions and pseudo-science. If we assume with Mr. Mill that all formal knowledge partakes of the nature of sense-experience, that there is no difference between the two, no general judgment would be allowable and the idea of necessity would be inadmissible. These consequences are accepted by Mill. In that case science would lose its value and philosophy would be without foundation. The most absurd superstition could not be rejected off-hand on the ground of being contrary to that which through logic and other formal sciences has been found to be necessary and a condemnation of any superstition on the part of science would be mere arrogance. Pseudo-science would have the same right with true science.

It is obvious that without being obliged to consider the apriority of formal laws as innate, we need not accept the consequence of Mr. Mill's philosophy. We can and we do retain the idea of necessity and we consider it as the corner-stone of all science.

V. THE MEANING OF "NECESSARY."

We have to be on our guard lest we introduce some mystical element into the idea of necessity. There is nothing mystical about necessity. Necessary means that a certain operation, if it is exactly the same operation as another one, will produce exactly the same result. When we posit two units twice, we shall have the same result as when we posit one unit four times; and we call this result four. We shall reach the same product whenever we repeat the same operation. Knowing that we shall always reach the same result, we can, *a priori* (or beforehand) and with certainty, determine the result of certain operations after we have mentally gone through the same operations for all possible cases and under any imaginable conditions. That a perfect apriority with an unfailing certainty is possible only in the domain of formal thought is natural. The reason is that we know our thought-forms exhaustively. They contain nothing but that which has been predicated about them. Our sense-experience however is always piecemeal and never exhaustive.

Comprehension is actually a tracing of form relations and a formulating them in concise statements. The scientist's work is based upon the methods of measuring and counting (i. e. the methods of formal sciences) and he undertakes to show that certain phenomena, different in some respects, are the same in other respects, that their sameness can be stated in a comprehensive and exact formula. In this

way he marks out their determining factors in terms of formal thought (for instance in numbers), so that we can compute them and predict them according to their determining factors, so that we can know, according to their conditions, that they will be always as they are.

The importance of formal thought is paramount in science and the problem about the necessity which attaches to the laws of formal thought is the fundamental problem of philosophy.

There are many philosophers, still, troubling themselves to solve the problem in the fashion of Schopenhauer or of Mill or looking upon the problem as insoluble. We do not doubt that the solution here presented is the only possible solution which as soon as it is understood will find a general acceptance.

Must it be added that the solution of this fundamental problem does not involve the ready solutions of all other minor problems? Oh no! We all know that the solution of one problem is only a stepping-stone for attacking other problems. The possibilities of progress are as unlimited as the scope of cognition. Light on this general subject gives us hope that we shall succeed in throwing light also upon other subjects which are still shrouded to the philosophical inquirer in impenetrable darkness.

VI. MODERN LOGIC.

The problem of modern logic is at bottom no other problem than that of formal thought and of the origin of thought-forms. Professor Dewey in the excellent essay which appears as the leading article of this number says: "Any book of logic will tell us what this conception of thought is: that thought is a faculty or an entity existing in the mind apart from facts and that it has its own fixed forms with which facts have nothing to do—except in so far as they pass under the yoke." This is the old conception of thought, rightly criticised by Professor Dewey, for, closely considered, it turns out to be dualistic. However, as soon as a proposition is recognised to contain or to rest upon dualism, it becomes a problem. The problem of modern logic is, How can we arrive at a monistic conception of logic, how can we rid ourselves of the dualism on the one side of facts not yet rationalised by the method of thought-forms and on the other side of mind with its empty thought-forms assimilating facts to its own nature.

Our solution of the difficulty has been proposed, in the sense outlined by Professor Dewey, in "Fundamental Problems." Professor Dewey, according to our opinion, is right when he says there is no such a thing as transcendental thought, or pure thought, thought by itself. And there is no such a thing either as fact, crude irrational chaotic fact. The world of fact, indeed, is a cosmos and no chaos; there never was a chaos and never will be a chaos, for the laws of form are an essential and the most characteristic feature of the world.

Can there be any question how the order found in thought-forms originates in a world in which the inorganic and unfeeling mineral crystallises in a regular shape

according to strict mathematical laws, i. e. the laws of form? A world in which the plant grows not otherwise than according to strict mathematical laws building up roots and stem and leaves and petals and stamens and all other organs obedient to a certain plan which will vary according to circumstances, but throughout consistent with the principles of formal laws? Can there be any question that in this world of cosmic harmony thought-forms will develop in feeling beings as a microcosm, exhibiting the same regularity and conformity to law as do in this world all other things animate and inanimate? Our pure, i. e. merely formal, thought is an abstraction which serves the purpose of comprehension. And so is the concept "matter," being that which produces sense-impressions. There are no such ghosts as pure matter or pure thoughts in reality.

Modern logic, so far as we conceive it to be right, is by no means an overthrow of the old formal Logic, generally called Aristotelian. It is simply an amendment made in order to exclude an erroneous interpretation. And so is modern mathematics not so much a revolution as an extension of the old Euclidian system. It is a revolution only against a certain unclear conception of mathematics according to which this science is said to rest upon axioms, these axioms representing absolute truth—unprovable, incomprehensible, and mysterious.*

The main truth of monism is that reality forms one indivisible whole and all our concepts are mere abstractions representing certain parts or certain features of the whole. As soon as we try to think of any of them as things in themselves we become involved in inextricable contradictions. It appears as if the formal sciences contained some truths which were absolute and independent of actual reality. But let any one think of any number, of 2 or 3, and he will soon find that conceived as absolute beings they are meaningless and unthinkable.

This is not to say that numbers are phantoms, but that conceived as absolute beings they are phantoms. Numbers and all formal concepts represent something real, they represent pure forms. And form is as much a part and feature of reality as is matter and energy.

P. C.

* Hermann Grassmann, one of the founders of modern mathematics, has called attention to the fact that Euclid had a clearer conception of the fundamental concepts of mathematics than his ill-informed translators and interpreters. Grassmann says in his *Ausdehnungslehre*: "From the imputation of confounding axioms with assumed concepts Euclid himself, however, is free. Euclid incorporated the former among his postulates (*ait'huata*) while he separated the latter as common concepts (*koinei ennoiai*)—a proceeding which even on the part of his commentators was no longer understood, and likewise with modern mathematicians, unfortunately for science, has met with little imitation. As a matter of fact, the abstract methods of mathematical science know no axioms at all."—Quoted from *The Open Court*, Vol. II. No. 77, *A Flaw in the Foundation of Geometry*, by Hermann Grassmann, translated from his *Ausdehnungslehre* by μικρκ.

BOOK REVIEWS.

BELIEF IN GOD. Its Origin, Nature, and Basis. Being the Winkley Lectures of the Andover Theological Seminary for the Year 1890. By *Jacob Gould Schurmann*. New York: Charles Scribner's Sons. 1890.

The learned Sage Professor of Philosophy in Cornell University, after tracing the historical origin and development of the belief in God, expresses his conviction that the problem of the modern theist consists in the union of the Aryan and Semitic modes of interpreting existence. We shall then have "a synthesis of the Father of all spirits with the ground of all nature." This is the hypothesis developed in the course of the lectures delivered by Professor Schurman last year before the Andover Theological Seminary on the Winkley foundation, that form the contents of the present volume. The theism embodied in that hypothesis is called by the author *anthropocosmic*, because, while it is based on the facts of the universe and those of human nature, the universe must be interpreted in the terms of man, and not man in the terms of the universe. The key to the universe is the self-conscious spirituality which makes us selves and persons. Hence anthropocosmic theism is the doctrine of a Supreme Being "who is ground both of nature and of man, but whose essence is not natural but spiritual."

Before considering the evidence for this hypothesis, let us see what the author has to say with reference to the logical character of the belief in God. He shows that *agnosticism*—of which he treats under its three significations as referring to the method of knowledge, the object of knowledge, and the subject of knowledge—is not consistent with the insight into nature and the constitution of knowledge gained by the Newtonian method of hypotheses and verifications. Science, as opposed to pure phenomenalism, assumes that what has not originated in the percipient subject is objectively real, and it postulates the universality of law in nature, a postulate which is the expression of a conviction of "the unity and universal inner connection of all reality." The objective world cannot be understood without reference to our own conscious experience, and as the only reality we know from the inside is a spiritual *ego*, self-conscious spirit must be ascribed to the one ultimate reality whose existence science assumes, as that which will alone satisfy the requirement of unity in the midst of change.

It might be objected here, that the existence in man of a spiritual *ego* requires proof before that of a universal spirit or world-soul can be inferred from it. The author takes the existence of the *ego* for granted, a course which is quite allowable from the theistic standpoint, although, in the face of what is now known as to the dissolution of the *ego* under abnormal conditions of the organism, not scientific. Having made that assumption and inferred the existence of God from that of the human spirit, the author explains the nature of the one by reference to that of the other. He tells us, that the finite spirit is identical, within the limits of its range, with the infinite spirit, because it is an *ego*, and that in the *ego* we have, not merely a mode of the divine activity, but a part of the divine essence. Such being the case, the author has no difficulty in inferring the attributes of God from the phenomena exhibited by man. Thus God is a God of righteousness because the moral capacity in the human spirit must have its ground in the infinite Spirit. Again universal benevolence or love is the ideal of which human morality is the realisation; hence we must conceive of the Spirit of the universe as a God of love.

We do not think the author's final conclusion, that "the phenomena both of the universe and of human life require the thinking mind to postulate a Supreme Ground of things which we are entitled to describe as self-conscious Spirit and loving Father," is warranted by his premises. But we can accept the statement that our knowledge of God must continue to grow with our knowledge of man and nature. Through these alone can we know Him, but the difficulty is to interpret the revelation. Let it be admitted also that the end of nature is the production of man, and that what is referred to by the author as the human spirit is "the organ of that communication of God which is the end of the universe." This does not in reality throw any light on the nature of God. The utmost that can be said is that, as man is an organism possessing certain functions, the universe, viewed as God, must have an organic existence with functions *corresponding* to those exhibited by the human organism.

The author's reasoning in support of the belief in God as cause or ground of the world, and as realising purpose in the world is very ingenious. He affirms that the creational form of the argument from causality is insufficient. It satisfies the devotional needs of a certain class of worshipers, but what the religious, as well as the scientific, consciousness demands is a God "here in the world, not there outside of it or making it." It has not yet been shown that the universe has had a beginning in time, and the argument in favor of the eternity of matter ends with an assurance of the eternity of spirit alone. Spirit is the eternal reality, and nature its eternal manifestation, the latter being no more separable from the former "than the spoken word from the thought it symbolises." The causal relation is, however, absolutely necessary for our apprehension of the facts of the universe, and as it cannot be interpreted without contradiction as an action between independent beings, it must be explained as the eternal dependence of the world upon God. This implies that God must be volitional as well as self-conscious; "for without

will there could be no activity, no efficient causation, no material universe." The universe is thus the eternal expression of the divine will. But what is the purpose realised in creation? The activity of the divine will precludes the notion of a blindly working nature. As creation is the eternal self-revelation of God, the supreme and preconceived end of all things must be the glory of God. But man is indispensable for the attainment of God's glory, and therefore the end of nature as a realised scheme of divine ideas is the production of man. The volitional and teleological arguments as thus stated by the author are consistent with the theory of evolution developed by Darwin, but they may be combatted on other grounds connected with the conditions of the existence of God as one with Nature. With this observation, we must leave Professor Schurman's very thoughtful book which, although for the reasons we have stated, not conclusive, presents the theistic argument with great clearness and in its strongest form. Ω.

JUDAISM AND CHRISTIANITY. A Sketch of the Progress of Thought from Old Testament to New Testament. By *Crawford Howell Toy*. Boston: Little, Brown & Co. 1890.

This work is another contribution to that genuine history which is alone competent to impart any true instruction. In it the author undertakes to give an account of the genesis of Christianity as a child of Judaism.

It seems to be the thesis of the author that those conceptions and beliefs that characterise any form of religion are rather determined by the social evolution than that the social progress and its features are determined by the evolution of ideas among which the religious ideas are specially influential. In his introduction the author sketches out his view of the general laws of social progress as the same are related to religious thought. He notices in history the tendency of ethnic religions to give way to or to develop into universal religions, and argues that Christianity is destined to overcome all its rivals and prevail universally. This kind of a conclusion is a natural one to follow from the theory that the character of thought is determined by social circumstances and progress. But if it be true that the special course of the evolution of thought and its characteristic form at any epoch is determined by causes that are uncontrolled by social conditions, that as between thought and society thought is the masterful factor, then quite another conclusion may ensue. But the dubitable nature of the main thesis of the work does not much detract from the great excellence of the work in general. As a history of the evolution of Jewish religious conceptions and beliefs from the very first until the establishment of Christianity, it is in the highest degree interesting and instructive.

After a discussion of the literature of the Jews and the formation of the canon, the author proceeds to describe in full detail the nature genesis and mutations of the cardinal religious doctrines as they revealed themselves to the Israelite, Jewish, and early Christian insight. The entire body of the data are interpreted in consonance with the modern scientific idea of the organic nature of society. Jesus is

regarded as the master spirit that created the Christian Church, and Paul whom many would install as the real author of the same is accordingly given only a second place. Altogether it may be said that Professor Toy has given us a most valuable contribution to religious history and to the scientific interpretation of the same. *po.*

PRONAOS TO HOLY WRIT. Establishing, on Documentary Evidence, the Authorship, Date, Form, and Contents of each of its Books, and the Authenticity of the Pentateuch. By *Isaac M. Wise*. Cincinnati: Robert Clarke & Co. 1891.

Rabbi Isaac Wise, the president of the Hebrew Union College of Cincinnati and the Nestor of Orthodox Judaism in America, presents in the "Pronaos to Holy Writ" a review of the Biblical books with comments as to their authenticity and the times in which they were written. Having read these "books and every word thereof in the original for a term of sixty-six years, i. e. from boyhood up to his seventy-second birthday," and having "acquainted himself with all the ancient versions and commentaries and a large portion of the modern translations and commentaries of the Bible," the author is entitled to be heard. Rabbi Wise is a stern monotheist and he declares: "God only did create light out of darkness; man cannot produce truth out of fiction, unless in his self-delusion problematic truth satisfies him. All so-called gems of truth buried under the quicksand of fiction and deception are problematic at best, if not supported by authoritative corroborants." This is true. All truth depends upon verification. We cannot make truth, but must find it, we must be able to corroborate it, and the corroborants of truth are its authority. Dr. Wise's idea of a corroborant is different from ours, he says: "No one can speak conscientiously of Bible truth before he knows that the Bible is true, and especially in its historical data." This seems to indicate that we must have a belief in the truth of the Bible before we investigate it and that moral truths, the ethics, the philosophy of the Bible depend upon its historical data. We cannot go so far with the author of the Pronaos. Dr. Wise says: "The science commonly called Modern Biblical Criticism, actually Negative Criticism which maintains on the strength of unscientific methods that the Pentateuch is not composed of original Mosaic material, no Psalms are Davidian, no Proverbs Solomonic, the historical books are unhistorical, the prophecies were written post festum, there was no revelation, inspiration, or prophecy, must also maintain that the Bible is a compendium of pious or even impious frauds, wilful deceptions, unscrupulous misrepresentations." Dr. Wise thought it necessary to meet Negative Criticism with the documentary evidence and for this purpose he wrote his Pronaos, which is to be an entrance-hall to the Temple of Biblical Truth. We do not side with the negativism of certain biblical critics, for we believe that historical investigations have proved large portions of the Pentateuch to be Mosaic, several psalms to be Davidian, and the historical books to contain as much history as many old historical books contain. We believe that they have to be judged and searched and commented just as much and in the same spirit of scientific inquiry as our philologists

treat Herodotus or Livy. But the value of the Bible, in our opinion, does not depend upon the acceptance or rejection of these or those historical data; nor is it necessary to consider the Hebrew prophets as special revelations of God, in contradistinction to the divine revelation in nature and the history of mankind in general. It may be true enough that the orthodox God-idea of Monotheism depends upon the belief in special revelation and prophecies, and it is also true that most of the Biblical criticism has been destructive and negative. But there is a way possible between both standpoints which may be called positive criticism. This positive criticism attempts to understand the very life and meaning of the old religion, it attempts to comprehend the belief of the orthodox and construe it in the terms of science—i. e. of rational and clear thought. Religion is certainly not a mere fraud or a vain illusion, it is an ideal which developed naturally out of certain needs of man and the conditions of society. That religious ideas, especially the idea of God as the cosmic power which represents the moral authority, are no mere fictions, is proved by their survival, and those who believe in evolution should not be blind to the fact that there is something good, something true, something well adapted to surroundings in religion. To find these elements of truth and goodness which constitute the life of religion is not mere negative criticism, but positive criticism, and it is not at all necessary for those who aspire in this direction, to believe in any historical data, or in special revelations, or in prophecies, or in the personality of God, but simply to trust in truth. Truth is the only way of salvation even though it may shatter the most sacred idols of a venerable orthodoxy.

The contents of the book show that the standpoint of the author does not blind him to the finer traits of the natural development of his religion. So, for instance, Solomon's rationalism is excellently contrasted with the spirit which manifested itself in the Judges as well as the Prophets. The author of the Judges was an outspoken theocratic democrat. "He literally pours out his abhorrence of the monarchical anti-theocratic institution in narrating the story of the first usurper Abimelech, the son of Gideon. . . . Entirely different are the language and tendency of the two appendices, evidently written by another author, who evinces his animosity to the democratic form of government by saying four times: 'In those days there was no king in Israel,' to which he adds twice 'every man did what seemed right in his sight'" (p. 46). "The Solomonic ethics is a commentary on the Mosaic ethics, as by reason understood. . . . Man's knowledge of ethical doctrine is identical with his knowledge of God's moral attributes, and all moral obligation has its root in the Mosaic God-idea. . . ." According to Solomon "wisdom based upon and rooted in the fear of Jehovah with the revealed material before them was all-sufficient, without any further special oracles of any prophets. This peculiar rationalism brought upon him the ire of prophets and rabbis" (p. 111).

Some reviewers of Dr. Wise's book will probably find fault with him that he has taken little if any account of the results of modern biblical investigations. And this is a grievous fault in our times where it seems to be essential for a scholar and

author to have read the very latest things published on a subject while an acquaintance with the views of the classical old authorities is considered unnecessary. It appears that Dr. Wise did not intend to present his views or criticisms of and his answers to the latest biblical investigations. It may even be that he is not familiar with many of them. Granting this to be a fault of his book it is, nevertheless, refreshing to us to find an author who has actually read and is excellently familiar with all the old sources of the subject he is writing upon. KPS.

THE FOUNDATIONS OF GEOMETRY. By *Edward T. Dixon*. Cambridge (Eng.): Deighton, Bell & Co. 1891.

This work is divided into three parts, the first containing such doctrines of psychology and logic as the author deems sound and useful for his purposes, the second exhibiting the author's "subjective theory of geometry deduced from the two fundamental concepts *position* and *direction*," and the third "on the applicability of "the foregoing subjective geometry to the geometry of material space."

In his preface the author expresses his desire that those who criticise his work shall "consider categorically" certain questions relating to his theory of definition, to the definitions and axioms prescribed by him, to his proofs of propositions and to the "objective applications" of his three axioms.

Geometry may be studied for two distinct purposes, neither of which necessarily involves the other. Unless the aim is mainly the discipline of the logical faculty, it is plainly a poor method of study to pore over the definitions, axioms, postulates, theorems, problems, and demonstrations of Euclid or any similar textbook. Practical resources and geometrical information can be acquired much better and more rapidly by a course of mechanical drawing with here and there a more or less loose explanation of the grounds and reasons that warrant the geometrical doctrines, than by means of the Euclidian course. Under such a method of instruction the student would rarely feel any real doubt as to the truth of his geometrical knowledge.

But where the paramount aim is the training of the reason the Euclidian rigor is all important. Hence the perfection of that method by the discovery and certification of the ultimate grounds on which, and the principles by which, it may be unfolded systematically and in necessary and sufficient sequence without presumption or fallacy, is an object of the most momentous concern to science, to philosophy, and to culture in general. For it is well known that however good an account elementary geometry may give of its superstructure the reports given of its foundations are all very far from satisfactory.

Repeated and strenuous efforts have been made, and by the most competent of our race, to discover and certify the true state of the case in respect to the geometrical foundations, in order that the whole edifice of that science shall display throughout the same thoroughgoing necessity and sufficiency that distinguishes it in general.

The author of the work under review is persuaded that he is now able to perform this so desirable service. He avers his belief that the system of geometry he "has set forth in this book is *logically sound* and that consequently the more it is "discussed and criticised, the more firmly will it become established." He takes his stand upon two fundamental concepts, *position* and *direction*, which he defines not explicitly but "implicitly." This leads us to consider his first question and his theory of definition.

The embarrassments that involve the foundations of elementary geometry are mainly, if not wholly, those which involve the general problems of definition. Now a definition is the certification of the purport of a name by means of a statement or a conspiracy of statements necessary and sufficient to that end. But names are constituents absolutely necessary for the formation of any statement, so that the above definition of a definition may be restated thus: A definition is the certification of the purport of one name by means of other names, necessary and sufficient to certify the purport of the one defined. Evidently then, definition can only lead us from name to name in unending process, or to some undefinable name, or to some name that we choose to leave undefined; and the question arises, on what sort of names shall we take our stand as ultimate grounds?

Our author answers this question as follows: "The propounder of a scientific theory is not of course expected to teach his readers to speak, it is only necessary for him to define the terms peculiar to his science, or those to which he wishes to "attach peculiar meanings. He may therefore assume that the meanings of all "other words are known to his readers."

He then propounds that "all that is logically required for a definition is one "or more assertions with regard to the word to be defined or its attributes," provided "they are not demonstrably incompatible with each other."

Although our author conceives that logical competence requires no more than this for a good definition, he yet goes on to remark, that "if the definition is to "form the basis of a deductive science it is further advisable that the assertions "should be independent," and that "where it is required to define a term whose "denotation is already known, it is further necessary not only that the assertions "should be commonly accepted as true with respect to it, but that they should re- "strict the meaning of the term exactly to its accepted denotation, neither more "nor less, and should do so in the simplest manner that can be devised."

It is upon this theory of definition that our author requests of his critics a "categorical" answer to his first question, "Do you accept the requirements I have "laid down for a logical definition? (If not please state which of them you object "to, why you object to it, and what you would propose to substitute for it.)"

Since it is a "categorical" answer that is requested and since also it is the matter of definition that is put in issue, we wish that our author had been more definite and had made his propositions better issuable, for we must protest that we

regard ourselves obliged to answer to what we can best conceive to be the author's true meanings rather than to what he has explicitly said.

We do not conceive that he regards it as *necessary* to a definition that the defining assertions should be expressed "in the simplest manner that can be devised." We have also to take his use of the word "restrict" as importing completion as well as limitation, and his use of the word "requirements" as intending conditions that together are sufficient as well as necessary.

If we are right in our understanding of the meanings of our author he contemplates four cases, first, the definition of a name that has no denotation already known and that is not to form the basis of a deductive science, second, the definition of a name that has no denotation already known but which is to form the basis of a deductive science, third, the definition of a name that has a denotation already known but which is not to form the basis of a deductive science, and fourth the definition of a name that has a denotation already known and is to form the basis of a deductive science.

In this fourth case our author deems it requisite for a logical definition that there shall be made one or more assertions about the subject of definition that are not demonstrably incompatible with one another, that are independent of one another, that are commonly accepted as true in respect to the subject defined and that "restrict" the meaning of the name under definition exactly to its accepted denotation.

It seems to us that this last requirement dispenses with the necessity of all the rest. If we have provided an assertion or a set of assertions that do in fact complete and limit the meaning of the subject of definition exactly to its proper denotation that is a definition in full. It implies that the defining assertions are all consistent with one another, and in case any assertion is dependent upon one or more of the rest that is a circumstance wholly immaterial. *Utile per inutile non nocetur.*

Again, what is it to be commonly accepted as true? Does logical competence depend on the altering states of our knowledge or on the fluctuations of opinion? Was a whale logically defined as a fish before we learned that it was a mammal?

The third case allows of the application of the same comment as that made upon the fourth. But in the first and second cases the doctrines of the author as well as his suppositions are very notable. He supposes the anomaly of names without any known denotation, by which he may mean those which have no application whatever. In respect to such he propounds that they may be given a logical definition by making one or various consistent assertions as applicable to them or to their attributes.

"The proof of the pudding will be found in the eating," as our author says. So let us say that a troft may be perceived whenever our attention is excited, and that trofts are of multitudinous variety. Do these assertions constitute a logical definition? It is a prime requisite for a definition that the defining assertion or assertions shall have a meaning, which is the same as to say that names must be

employed that are already significant. These significant names must be so used that the intellectual sensibility shall be excited to perceive in a determinate way that which is intended to be defined. In other words, sense and not nonsense must be produced in the mind that considers the definition. Perhaps, however, our author intends such words as electricity, or spirit, or energy.

Because of the considerations above indicated and others we cannot accept the author's requirements for a logical definition as a whole. Some of them are in some of his cases unnecessary, while taken together they supply no new means whereby to solve the several problems of definition.

The author's subjective theory of geometry is plainly the outgrowth of his confidence in the solvent power of the concept of direction as a prime datum of geometry.

Everything of consequence in his essay depends upon the worth of this concept as a geometrical foundation. Considering the disparagement that has been visited upon that concept by numerous writers of good geometrical rank we naturally look for considerations tending to remove the discredit that has befallen that notion. Instead however of this we find the most palpable set of circular definitions. Direction is defined by direction in the most distracting way, thus:

"(1) A direction may be conceived to be indicated by naming two points as the "direction from one to the other."

The inaptitude of the term direction for use in geometry is rooted in its ambiguous purport. As commonly used it means at least three distinct but closely associated notions which become confused in thought and expression unless the most solicitous care is taken to distinguish them. When we speak of the direction of one point from another or of the direction from one point to another we mean the straight off-ness or from-ness or to-ness which one bears to the other; in other words a relation of separation and straight mediation. When again we speak of the direction of a motion we intend the indefinite straight sense of its procession, which is not a relation but an attribute of the motion. When still again we speak of the direction of a line we mean its straight *lay* as compared or as comparable with other actual or possible corollates which is again a relation but not necessarily the same relation as that that obtains between two points.

In all these meanings the notion of straightness is involved, and could we say in lieu of straightness first directness and then direction and holding fast in thought this sense of the word, make a noun of it, so that a direction would intend the same as a straightness and no more, it might obtain a useful geometric term and notion.

To define it we might first define a line thus: A line is a space boundary that is indefinitely long but not otherwise of any extent. Then, a direction is a line such that between the points that bound any assigned parcel of it no copy of said parcel is possible.

But direction purports to our author the second of the meanings above set forth, namely, the indefinite straight sense of the procession of a motion. Definite parcels of a direction thus understood are identical with vectors.

Now the notion of straightness is after the notions of point and line the most fundamental one of geometry and the one which is altogether the most prominent and useful. It is the necessary means for any definition of a vector or of the notion which our author deems so important. As straightness is attributable only to lines and long things which a line may represent it makes no difference whether we define straightness or a straight line, but a masterful performance of this definition is absolutely necessary before the foundations of geometry can be abidingly certified.

Our author defines a straight line thus: "A straight line is a continuous series of points extending from each of them in the same two directions." What kind of a thing a continuous series of points may be we are not told but as a point is defined to be "a portion of matter so small that for the purpose in hand variations of positions within it may be neglected" we take it that a straight line is a continuous series of particles of matter. The "purpose in hand" in this case must of course be the purpose of geometry.

In defining an angle our author first lays down that "The difference between two directions is called their *inclination* to one another" and then "The measure of an inclination is called an *angle*."

Considering that it is the doctrine of the author that every straight line has two contrary directions the measure of whose inclination is an angle of one hundred and eighty degrees, we imagine a northeast southwest line cutting an east west line and wonder if the right hand upper angle is really two angles according to whether or not the directions both pass to the left or both pass to the right or pass one to the left and the other to the right.

Were this an ordinary work we might regard it as due to the author to notice the many excellencies which characterise it, in spite of the defects which we notice. But as our author evidently realises, the eminent dignity of the topic challenges and its singular importance demands unsparing criticism. He who offers to instruct the world on the foundations of geometry draws his sword and throws away the scabbard, and like a doughty champion he will scorn to accept any favor, prizing only such success as he shall take at the point of an efficacy of treatment that conquers all competent and candid criticism.

Stringent as are such terms of contest an author who is a worthy competitor in the field of geometric research can be well content with them in the perception that the very same conditions apply in full force to the comments of his critics.

The author is undoubtedly an able man and a close thinker. He has concentrated his mind upon a work that is worth the energy of a lifetime. But we must confess our judgment to be that in spite of his capacity and evident devotion he has come short of the high result to which he has aspired.

psl.

LES FÊTES DE MONTPELLIER. PROMENADE A TRAVERS LES CHOSSES, LES HOMMES ET LES IDÉES. By J. Delbœuf. Paris: Félix Alcan.

We have here a charming narrative by the well-known Professor at the University of Liège of his visit to the fêtes of Montpellier, undertaken in great measure to make the personal acquaintance of M. Dauriac, the critic in the *Revue Philosophique* of the author's work "La matière brute et la matière vivante." The description given of the fêtes, which marked the sixth centenary of the University of Montpellier, is very entertaining, as is the account of the journey through the South of France; but as M. Delbœuf says that he was more curious to become acquainted with men than with places, what he tells us about the former will be the more interesting.

The author, with the companions of his tour, could not pass Nancy without stopping to see "the masters in the science of hypnotism" there. An account of what he saw and heard gives the author the opportunity of repeating "That he does not regard forgetfulness on awaking as characteristic of profound hypnosis, and that experience is against the efficacy of criminal suggestion unless the subject is criminally inclined." The fêtes at Montpellier commenced with a religious service in the Cathedral, during which the Bishop, M. de Cabrières, preached a sermon so liberal in tone, that M. Delbœuf thinks the time is arriving when the church will demonstrate that Moses was the precursor of Darwin. At the University reception which followed, M. Delbœuf sought out among the professors for his friend M. Dauriac, whom he had figured when first he heard from him as small, thin and dark, but now found, in accordance with the usual rule in such cases, that he was tall, robust and fair. In the course of their subsequent conversations the two Professors made mutual confidences, M. Dauriac confessing that his true vocation was music, and that he was preparing a work on the psychology of the musician; while M. Delbœuf informed his friend that he was about to reply to his criticism of "La matière brute et la matière vivante," and that he would throw the greatest light on the origin, which was still obscure, of life and death. If the genial Liège Professor can do this, he may be the first to reap the benefit referred to in his own words: "The discovery of the cause of death could not fail to assure the immortality of its author and its inspirer, and sooner or later that of humanity at large." For, according to a medical adage, if the cause of a disease is known it is already conquered.

Montpellier was honored during the fêtes with the presence of Helmholtz, to whom but for national jealousy would have been confided the part of speaking in the name of the foreign universities. Nevertheless he was the true hero of the occasion, and when at the official reception, on the President of the Republic shaking his hand and saying a few gracious words someone feebly hissed, Helmholtz received in response a perfect ovation of applause. M. Delbœuf met with a congenial spirit in the Professor of Zoology, M. Sabatier, who has a laboratory at Cette. Their views on freewill were in sympathy. They agreed in allowing freedom not only to the superior animals, and to inferior animals and plants, but even to so called ino-

ganic matter. M. Sabatier is a Christian and at the same time a convinced transformist; having arrived at his views from religious considerations. He cited M. Dauriac as saying, "The reign of determinism is not in the objective world; its empire extends itself over nature only after having been exercised over thought. There is no other necessity than that of logic or mathematics." M. Delbœuf is evidently an "indeterminist" by nature. He heartily sympathised with the students in all their demonstrations of freedom, although one of them assumed a somewhat serious character. Dining in the open air with M. Millaud the author of an article in the *Revue Philosophique* on non-Euclidian geometry, he was prepared to talk mathematics. The surroundings were too much for him, however, and in recalling the scene he cries, "To the devil with philosophy and mathematics! I cannot recall what we said; in my remembrances, I see only blooming faces, I hear only the indistinct bursts of gaiety." M. Delbœuf's sympathetic nature is shown in the fact, which he records, that wild animals in confinement soon become familiar with him.

One of the principal objects of the author's journey was to see M. Gabriel Tarde, "one of the most prolific and original publicists in France, if not in Europe," who resides at Sarlat. After quoting passages from an article of M. Tarde on Social Darwinism, which appeared in the *Revue Philosophique*, M. Delbœuf remarks that nothing is more attractive and at the same time more fatiguing than the reading of his works. M. Tarde is "the locomotive that carries you to the end of your journey across countries by turns wild, agricultural, industrial, picturesque; but without giving you time to regard and admire." Referring to M. Tarde's acute criticisms of Lombroso and his theories, the author says, "It is not that he strikes the pseudo-thinker with formidable blows, but he makes him drop gently to the ground." The French publicist sees in *imitation* the source of social life, and he has been long engaged in developing the idea, to the great importance of which M. Delbœuf bears witness; although he objects to the use which M. Tarde makes of terms taken from mathematics, physics, and biology, to express his sociological views. On the question of freewill there was no agreement. Although the latter is a determinist, he believes in penal responsibility, on the ground of personal identity; the diseased person or the madman is no longer himself, in which they differ from the criminal.

We can say nothing of M. Delbœuf's visit to the canons of the Tarn. Here was captured a lizard which displayed, when compared with a Spanish lizard in captivity with it, as much difference in character as could be found between two men chosen at hazard. The author concludes an amusing description of the habits of the two captives by recommending their history to the politicians and the historians of France and Spain, as likely to throw light on that of the peoples themselves. We leave M. Delbœuf, whose book of seventy-five pages may be said to be as full of interesting matter as an egg is of meat, with quoting his postscript: "On the day that these lines appear (March 1891) the Spanish lizard has finally cast off his savage character and follows in the footsteps of the French. Effect of imitation." Ω.

DER POSITIVISMUS VOM TODE AUGUST COMTE'S BIS AUF UNSERE TAGE (1857-1891).

By Hermann Gruber, S. J. Freiburg im Breisgau: Herder'sche Verlagshandlung. 1891.

This pamphlet of 194 pages is the continuation of another pamphlet on August Comte, the founder of Positivism, which was reviewed in *The Open Court*, No. 134. The author is a Jesuit and it is a matter of course that all the facts he relates, all the doctrines he explains are represented from the standpoint of Roman Catholicism. The booklet is of great importance in so far as we learn through it what an erudite Catholic mind thinks of that recent movement of philosophy which has been called by the collective name Positivism. The method pursued by Hermann Gruber is most recommendable. He states facts and quotes abundantly so as to let the various philosophers speak for themselves. He is economical with the salt of his own opinion, yet he uses it with such a discretion that Roman Catholics can become thoroughly acquainted with infidel views without suffering in their faith.

The book consists of two parts: (1) The Positivism of the schools in connection with Comte and of the Positivistic movement outside of these schools. The first part begins with a discussion of Littré. Littré, "the voice, the spirit and the soul of Positivism," as Bourdin calls him, is characterised as a philological genius. Although he had chosen the medical profession, which however he abandoned early, and although he regarded the propaganda of the positive philosophy as his life-work, all his talents lay in the direction of special investigation in the literary, historical, and linguistic fields, and the editing of the French dictionary remains his main achievement.

Comte had not nominated a successor who should in his place be the *Directeur du positivisme*. Littré had forfeited this honor on account of his quarrels with Comte in which he strongly sided with Madame Comte against her husband. After Comte's death P. Lafitte was elected as a temporary director and he has kept this office ever since, which he conducts with remarkable devotion and unselfishness. Although without property himself he proposed not to use the positivistic funds until he had shown himself through his work worthy of using them. He ekes out a scanty living for himself by giving lessons in mathematics, and devotes all the rest of his time to the management of and the propaganda for the Positive Church. His co-workers are Audiffrent, Antoine, Robinet, and others—all of them as the reviewer thinks strange people, visionary enthusiasts, and, to use an expressive Americanism, regular cranks. Lack of space prevents us from recapitulating their ceremonies, their sacraments, festivals, pilgrimages, memorials, and other forms of service. Their whole behavior proves that they are and will remain infidel Roman Catholics and it would have been wiser if they had not left the church at all. The positivistic orthodoxy culminates in the positivistic mystery of Comte's idea of a "Virgin-Mother" (*Vierge-Mère*) which according to Lafitte is destined to elevate the intercourse between the sexes, while Audiffrent, Lagarrigue, and the Brazilian Lemos stick closely to Comte's view "to represent positivism as directly conceived

under the Utopia of a virgin-mother."* General Lemos goes so far as to say "We prefer to be looked upon with St. Paul for the sake of our faithfulness toward Comte as fools than to be praised by the contemporary frivolity as sages." And Audiffrent defends against Lafitte the diplomatic action of Comte's with the General of the Jesuits concerning an alliance between Positivism and Catholicism. Positivism, he says, invites all who have ceased to believe in God to become positivists, but it induces all those who still believe in God to turn Catholics, thus making an alliance possible of the disciplined against the non-disciplined.

If the Jesuit General ever has seriously considered the offer, he would perhaps have accepted it, for there is no doubt that he would have made the better bargain as all the discipline we should say is on his side.

The English group of Comtean Positivists consists mainly of Fr. Harrison, Richard Congreve, George Eliot and James Cotter Morison. The second part of the book which treats of the positivistic movement outside of the positivistic schools in England, France, Germany and other countries will be less interesting to English and American readers partly because the subject is better known to them partly because our author is apparently more familiar with his French than with his English sources. The second part begins with John Stuart Mill and Herbert Spencer. It mentions Bain, Lewes, Clifford, Maudsley, Darwin, Sully, Romanes, Huxley, Tyndall. Clifford's view is sketched in sixteen lines but in such a way that it appears grotesque. As French positivists outside the schools are mentioned Taine, Ribot, Fouillée, Guyau, Charles Richet, J. Luys, Cl. Bernard, and Roberty. It is correctly said of Ribot that his doctrine of personality is most characteristic of his views. The unity of a personality in the ego does not grow from above downwards but from below upwards, but Gruber is mistaken in saying of Charles Richet, the editor of the *Revue Scientifique*, that he represents about the same views as Th. Ribot. Richet's publication on telepathic experiments in which he confidently believes, would never be countenanced by Ribot.

As the first German positivist is mentioned Eugen Dühring. Riehl, Laas, Lange, Vaihinger and Avenarius are disposed of together in the next following chapter. Several pages are devoted to Wundt.

The little chapter headed *Nord-America* (p. 171) consisting of two and a half pages begins with the words: "According to the testimony of G. Stanley Hall philosophy in the new world is in its swaddling-clothes still (*in den Kinderschuhen*). Philosophers over there are as rare as snakes in Ireland (*Schlangen in Norwegen*).† For scientific instruction in the United States are used as guiding stars Spencer,

*... "A représenter le positivisme comme directement résumé par l'utopie de la Vierge-Mère"—Comte to Audiffrent, the 8th of St. Paul 69 (May 28, 1857.)

† Good philosophers, it is true, are rare in America, perhaps rarer than in Europe. Nevertheless the interest in philosophy is exceedingly strong here. There are metaphysical and philosophical clubs all over the country, and the crop of philosophical dilettanti is at least as great on this side of the Atlantic as in Paris.

Lewes, Darwin, Huxley, and Haeckel." As a representative Atheist is named Ludeking, a man unknown to fame, while Colonel Ingersoll is not mentioned at all. It is maintained that J. D. Bell, a professor in New York had proclaimed the same confession of faith as Comte in *The Modern Thinker*—a journal which we have never seen nor ever heard of. The societies for ethical culture are characterised as avowing "a purely natural religion" while in fact natural religion, the religion of science and philosophy, as a basis of ethics is as rigorously rejected by Professor Adler as any dogmatic religion, and more than half of the two and a half pages is filled with a masonic proclamation of the Sovereign Grand Commander, Albert Pike, of Washington, which preaches the belief in an unknowable God and denounces Atheism.

The booklet closes with the following sentences: "The full and true positivism is embodied in the Catholic Church. The divine revelation which she represents is that which is truly real . . . truly sure . . . truly precise . . . truly organic . . . truly useful. The deepest root, however, and the most essential nature of all true positivism (this is vouched for by reason as well as by revelation) is not the relative but the absolute."

Here we conclude our review of the book. We have however to add a few words which concern *The Monist* as well as all the publications of The Open Court Publishing Co. Hermann Gruber mentions in his book *The Open Court* and its editor together with the societies for ethical culture. We have, ourselves, characterised our views as positivism and as monism, but we stated at the same time that our positivism had nothing to do with Comte or with any one of Comte's disciples.* They have (with the sole exception of Ribot and I should hesitate to call him a Comtean) contributed little if anything to the formation of our views. The name Positivism is a good and expressive word and we have adopted it because taken in its proper meaning it represents the true principle of modern philosophy. However we cannot agree with any of the fundamental tenets either of Comte or of his most positivistic and most scientific disciple Littré.† Comte as well as Littré are radical agnostics they repeat again and again that "We can know nothing about first and final causes. Positive philosophy denies nothing and maintains nothing." According to our view of the subject this attitude is rather negativism than positiv-

*It is a matter of course that we are in strong sympathy with many philosophers and scientists whom Hermann Gruber classes among the positivists outside of the positivistic schools, not only Th. Ribot, but also Guyau, Fouillée, Roberty, and others. How much they were influenced by the Comte-Littré or the Comte-Lafitte Positivism is difficult to say. It is certain that many of them would have accomplished the same work in the same way with or without Comte. Roberty was first a fervid disciple of Comte, but he soon combated not only Comte's law of the three stages (which latter by the bye was according to Schaarschmidt first pronounced by Turgot) but also his agnosticism, declaring that Comte was still entangled in metaphysicism, and that the last bulwark, the idea of the unknowable, had to be conquered also.

† We publish in this number a sonnet by Louis Belrose, Jr. to Emile Littré. Mr. Belrose is a positivist who attended together with Mr. Fred. Harrison positivistic lectures in France. We publish Mr. Belrose's poem as an expression of his gratitude and admiration toward a master mind but not as an expression of our view of Littré.

ism. But it is not even negativism; it is worse, it is mere scepticism leading to indifferentism. It sounds very philosophical to speak of the inscrutability of first and final causes but the very terms "first causes" and "final causes" are most nonsensical and self-contradictory concepts. (See "Fundamental Problems," pp. 88-90, and 101.) Comte and Littré imagine to have conquered metaphysics, but in fact they are the worst kind of metaphysicians. They believe in the ghosts of metaphysics as strongly as some mediæval minds believe in devils but are afraid to wrestle with them, because, as they maintain these metaphysical ghosts cannot be conquered.

Comtean Positivism, especially as it is represented by Littré, consists mainly if not exclusively of the doctrine to "let metaphysics alone" (which latter includes the object of religious worship) and limits science to positive issues. Thus the oneness of the sciences, a unitary world-conception is lost, for the hierarchy of the sciences which are to serve as a substitute for philosophy is rather a summing up of the stock of knowledge than a system of the sciences exhibiting their organic growth. It is an inventory rather than a plan to guide science in its further evolution. It is an anatomy rather than a physiology, for the very life and spirit of the sciences is missing. And outside the pale of the hierarchy of the sciences there is looming around an awful something quite different in its nature, like an infinite ocean surrounding a forlorn island, the unknowable first and final causes! That which is called by former philosophers "metaphysics," which is at the same time the essence of religion, is by no means either unknowable or indifferent. It is not something beyond, something extramundane, it is the very life of the world and our religious and philosophical opinions are not only of a theoretical interest. They are the main factors of our lives which in the long run will determine the direction of our development. That this is so, has not been sufficiently recognised, and we would suggest in this connection that a history of the United States should be written to point out that the political liberty of the country and its republicanism are nothing but the application of its religious principles and of the Puritan conviction of religious independence. The historic growth of the colonies remained faithful to this maxim. The religion of a man and of a nation is the most important thing. In the same way the structure of a seed predetermines the whole plant, and the angle of crystallisation together with the shape of the crystal-nucleus from which the process of crystallisation starts, will determine the formation of the whole crystal.

His sceptical attitude led Littré to what he and his friends call "tolerance." Littré's wife was a devout Catholic and his daughter was educated in her mother's faith. He had intended to explain to her his views of the subject when she had reached maturity, and leave the choice to her. But when the moment came, he declared that "the experiment was not worth the tears which it would cause." Our view of "tolerance" is radically different. Whatever the truth may be it should be struggled for, cost it ever so many tears or pains.

We cannot sympathise with Littré's method of constructing ethics upon the nutritive and sexual instincts, the former producing egotism, the latter altruism. Emotions are, says Littré, as much as ideas, the result of brain-processes in consequence of external impressions and "the struggle between both kinds of emotion make up the moral life." Littré rejects the evolution theory and its attempts to explain ethics. (See Gruber's book p. 20.) Having explained our views of ethics on other occasions, it is sufficient here to state that we consider Littré's attempt as a failure. We cannot even adopt the so-called "positive method," of which Littré says: "Whoever adopts this method is a positivist and whether he acknowledges the fact or not, also a disciple of Comte. Whoever employs another method is a metaphysician. It is the surest mark by which a careful mind will discriminate what belongs to the positive philosophy and what is foreign to it." What is this method? Says Littré: "It is an acknowledged principle of positive science that nothing real can be stated through reasoning (*raisonnement*). The world cannot be guessed." Littré is opposed to so-called *a priori* arguments. Hermann Gruber says in the preface: "This positive method is embraced by all the representatives of the lines of thought here discussed. All of them intend to build up their systems with the exclusion of scholastic, respectively of Kantian, Hegelian, or any *a priori* speculations after purely 'scientific' methods upon the foundation of the facts of experience." We certainly intend to build our world conception "upon the facts of experience" but the most important facts among them are their formal relations and these formal relations when represented in thought are exactly that element which Kant called *a priori*. The sense-element affords us the building stones, but the *a priori* element represents the mortar without which we could not build. So much do we oppose this one-sided philosophy which takes its stand upon what is wrongly called the purely scientific method, that our views have been called the Philosophy of Form, and justly, for Form is that feature of the world which makes of it a cosmos and formal thought is the organ of our comprehension. KPC.

UEBER DEN ASSOCIATIVEN VERLAUF DER VORSTELLUNGEN. Inaugural-Dissertation.

By E. W. Scripture, M. A., Fellow of Clark University. Leipzig: Wilhelm Engelmann. 1891.

This essay of 102 pages characterises most excellently some of the proceedings and methods of Professor Wundt's psychological laboratory. The author, a disciple of Wundt, is a native American who studied in Berlin, Zürich, and Leipzig, and took his degree of Doctor on the ground of this dissertation. The object of the treatise is not so much to solve as to formulate the problem of the associative course of concepts, and the author hopes that in a future treatise he will be able to propound his theory based upon the facts here related.

The experiments were made with the assistance of seven friends, among them German students, a doctor of philosophy, a doctor of medicine, and a teacher. They were of different nationality, three Germans, one Belgian, one Japanese, one

Englishman from the Cape, and two Americans, the author included. The apparatus used was so arranged that the person operated upon sat in the dark, before him was a plate of ground glass intercepting from a camera an image which was exposed for four seconds. Pictures of all kinds, colors, and plainly printed words were used. For other sense-impressions the observer was also seated in the dark. Several instruments for producing sounds were ready on a table. Tastes were effected by liquids which the person operated upon had to drink, and the sense of touch was investigated through handing him cards to which some small objects had been attached. The author was partly operator, partly observer, i. e. the person operated upon. The ideas evoked through the sense-impressions produced in this way, are enumerated in tabular form in the order in which they arose.

Among the experiments made in this way we find one kind which is of special interest. Sir William Hamilton made the remark in his Lectures on Metaphysics that unconscious ideas may serve as connecting links between two ideas otherwise unassociated. He represented his view in the following way: Let *A*, *B*, *C*, be three ideas, *A* does not suggest *C*, but both are associated with *B*. It happens that *A* is directly followed by *C* in consciousness. In such a case *A* may recall *B* and *B* may recall *C*, but *B* being a *minimum visibile* or *minimum audibile* does not enter consciousness. Thus the idea of the mount Ben Lomond called into Hamilton's mind the system of Prussian education. Subsequent reflection taught him that he had met on Ben Lomond a German. The recollection of the place was associated with the ideas—a German, Germany, Prussia. These ideas were too weak to enter consciousness yet they reawakened another idea which did enter consciousness, the system of Prussian education.

This is a mere suggestion of Hamilton's but Dr. Scripture proved its truth by actual experiment. He took cards containing some simple words, such as *MENSCH*, *GEHEN*, *KOMMEN*, *BLUME*, etc., and also Japanese words in Roman characters *HANA*, *HITO*, *IUKU*, *KURU*. To every word was attached another Japanese word in Japanese characters so that the same character appeared on *HANA*, and *BLUME*; *HITO* and *MENSCH*; *JUKU* and *GEHEN*; *KURU* and *KOMMEN*. The words were shown twice so as to give a stronger impression. The Japanese gentleman was excluded from these experiments, and indeed, the unknown Japanese characters which were only dimly or not at all remembered, evoked the corresponding words: *HITO*—*MENSCH*; *KURU*—*KOMMEN*; *BLUME*—*HANA*, etc. Dr. Scripture adds: "These associations were involuntary, the observer imagined them to be wrong, and could find no reason for the involuntary appearance of the words. He had not thought at all of the connecting links."

It appears that the links in a chain of concepts need not be all conscious and the result of his experiments in this line is formulated by Dr. Scripture as follows: A concept apperceived can bring another concept into the focus of consciousness although it was never associated with it, if there are other psychic elements of lower degrees or even outside of consciousness which are connected with both—provided

that there are no other elements stronger than these. The effect of the unconscious link however is much weaker than that which was conscious.

Pages 71-101 are devoted to the investigations of the after-effect of concepts. The phenomena of ideation being extremely complex, we cannot assume that the process of a so-called reproduced concept is analogous to the original idea. A sensation changes during its presence with reference to the degree of consciousness of its parts and even the concepts as a whole may be altered. The process is different according to circumstances. The renewed concepts differ from their originals, (1) in the degree of the consciousness of the whole idea, (2) in the degree of the consciousness of its parts among themselves, (3) in form, color, relations, etc., (4) in duration. In order to avoid the metaphysical influence of hypothetical theories we ought to avoid all kinds of terms suggestive of a theory and stick closely to a simple description of facts. Therefore Dr. Scripture proposes to discard such words as "retention, reproduction, revival," etc., and suggests the term "after-effect." Yet he adds, quoting from Wundt, "these after-effects themselves are as little ideas as the effects produced upon nerves and muscles by exercise can be called actions of will."

Dr. Scripture avoids explaining what he conceives these after-effects to be. We see no reason for disagreement and should say that the result of the after-effects is what generally goes by the name of "disposition." And a certain disposition is produced according to the law of the conservation of form in living structures. (See "The Soul of Man," pp. 418-424.)

Dr. Scripture is led by a consideration of his observations to the following statement: "Each concept is conditioned through the effects of the elements of the present state of consciousness and the after-effects of many (if not of all) previous elements of consciousness."

This result is not compatible with the theory of reproduction now almost universally accepted by the association-psychology. Wundt says: "If only certain single concepts were renewed, we might perhaps explain why in the memory-picture certain elements of a former reproduction are missing: but we could not explain why the elements of a concept change so often qualitatively as is indeed the case. This, it appears, is possible only because a memory-picture and others of a kindred nature affect each other mutually."

This will find explanation in the following experiment. The observer sees a dog, and thinks of a circus, which he saw a year ago. There is no direct association between the picture of the dog and the special reminiscence of that circus visited a year ago. The association was formed at the moment. Former sensations of dogs had their after-effects and this special reminiscence was localised.

Dr. Scripture maintains that Höffding's association theory contains too many hypothetical elements; it presupposes faculties of the soul to join like with like and to combine simultaneous or consecutive events.

KPS.

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As all sciences treat, to a great extent, of the same objects, they can be separated only according to *how* they treat things. On this principle, Mr. Scripture divides sciences into Special Sciences, General or Philosophical Sciences, and Didactic Sciences. The Special sciences are, I, the Mathematical Sciences, treating the *forms* of all experience; II, the Phenomenal Sciences, treating of the *contents* of all experience; the second class is divided into the Physical Sciences, which treat experience from its objective side, and Mental Sciences, which treat experience from its subjective side. The group of Mental Sciences is best divided, according to Wundt's scheme, into the sciences of mental processes, Psychological Sciences; the sciences of mental products, Philological Sciences; and the sciences of mental development, Historical Sciences. Psychology as a science of mental phenomena has a two-fold relation to the physical sciences: it is complementary to them, a necessary auxiliary; they are complementary to it, accessories in psychological investigation. States of mind always remain states of mind; they cannot be resolved into motions of particles of matter, and it is a fundamental axiom that *mental phenomena cannot influence or be influenced by material phenomena*. But we are justified in talking about a nervous stimulation becoming a percept, a muscular contraction following an act of will, as long as we remember that these are only substitutes for unknown quantities. Physiology investigates nervous changes; Psychology, mental changes; Physiological Psychology, the relations between the two. Mental phenomena are of two kinds, mental processes and mental products. Psychology is the science of mental processes; it seeks the exact description and explanation of the operations of our inner experience. The relation of Psychology to Philosophy

is a burning question. Metaphysics, or Philosophy in the narrower sense, seeks from the agreement of the results of all other sciences to establish a system of the principles that underlie all existence, i. e. a theory of the universe, material and mental. After the general principles have been determined by metaphysics, philosophy has the duty of correcting the special sciences when they set up one-sided hypotheses, and of helping where they are unable to proceed alone. Psychology is considered a part of philosophy, but as a special science, treating mental processes from its own standpoint, it is distinct from psychology as a general science treating mind, relations of mind and matter, etc., from the standpoint of philosophy. The latter should be termed Philosophical Psychology. The relation of Psychology to Logic depends on what the latter is. Logic is a science of thought, but thought is also a subject of psychology. Psychology treats thoughts as we think them; Logic, as we ought to think them. Each of the sciences, Epistemology, the doctrine of knowledge, and Methodology, the doctrine of methods, treats of thought for its own distinct purpose. The former determines what the truth is; the latter determines how we ought to think. The didactic sciences are of two kinds: the sciences of the general principles or ends to be obtained, and the sciences of the means to attain these ends. Among the former is General Pedagogy, which determines the ends to be sought for in education. Psychology furnishes the foundation of fact; the science of general pedagogy judges which of these facts are desirable, in much the same way as epistemology judges which are true.

In a former article (*Mind* No. 56) Mr. Marshall showed that Pleasure and Pain are primitive qualities which, under proper conditions, may appear with any psychosis, whatever be its content. He now finds that all the most notable pleasure-pain theories may in the first instance be placed in four groups, determined by the emphasis of certain kinds of pleasure or pain. An examination of pleasure-pain theories shows, *first* that there is a general agreement, with but few dissenting voices, that all pleasure is at bottom the same thing, and that all pain in its essence is a single psychological phenomenon, and further that pleasures and pains are unifiable; *second*, that there are certain facts so marked in experience as to have become the basis of the majority of pleasure-pain theories. Mr. Marshall proceeds to consider the theory that "the activity of the organ of any content if efficient is pleasurable, if inefficient is painful." He concludes that pleasures and pains are involved with the nutritive conditions of the active organ, and lays down the principle that "all pleasure-pain phenomena are determined by the action in the organs concomitant of the conscious state, as related to the nutritive conditions of the organs at the time of the action." The difference between the hypernormality of pain and of pleasure, turns upon the fact that pleasure is obtained where the organ has been *rested*. Rest in an organ which is sometimes active means storage of energy derived from blood supply; and action after rest means the use of stored energy. But as action of an organ after rest gives a psychic content which is pleasurable, we have the working hypothesis: "Pleasure is experienced wherever the physical action which determines the content involves the use of stored force—the resolution of potential into actual energy; or, in other words, whenever the energy involved in the reaction to a stimulus is greater in amount than the energy of the stimulus." By a similar process of reasoning we obtain the hypothesis: "Pain is experienced whenever the physical action which determines the content is so related to the supply of nutriment that the energy involved in the reaction to the stimulus is less in amount than the energy of the stimulus." We may also say in general, "Pleasure and pain are primitive qualities of psychic

states which are determined by the relation between activity and capacity in the organs, the activities of which are concomitants of the psychosis." Mr. Marshall then supplies the psychological interpretation of the physiological phenomena attendant on the pleasures of Rest and of Relief, and of the pain of Obstruction or hindered activity. He concludes the present article with the statement that the physical concomitants of pleasure-pain phenomena are to be found in general qualities common to all processes which are at the basis of our conscious life; and that this is corroborated by introspective analysis of pleasures and pains. Mr. Marshall's idea does not appear to us as a happy solution of the problem.

The object of Mr. Caldwell's paper is to explain Kantism through Schopenhauer, who claimed to be Kant's only true successor in philosophy. Schopenhauer came to the conclusion that Kant's only real discovery, given in the "Æsthetic," was that Space and Time were known by us *a priori*. The principle of Causality is the only element of value he finds in the "Analytic," and a much simpler account could have been given of it. The "Dialectic" represents the Negative side of the Critical Philosophy, which although conclusive, might have been stated more simply. In Ethics Kant rendered the immortal service of showing, by his attribution of a noumenal freedom to man, compensating for his phenomenal necessary determination, "that the kingdom of virtue is not of this world"; although the *K. d. prakt. V.* is only an application to ethics of the principles already reached in the sphere of the Pure Reason. Schopenhauer finds the *K. d. Urtheilskraft* to contain the characteristic defect of Kant's whole Philosophy—the starting from indirect instead of direct knowledge. Lastly, the criticism of the Teleological Judgment only shows what the *K. d. r. V.* already showed, the subjectivity of what we may call the ontological categories. According to Schopenhauer, the chief tendency of the Kantian philosophy is to establish "the total diversity of the real and the ideal." The Ideal he explains as "the visible, spatial appearance with the qualities that are perceived on it," and the Real as the "thing-in-and-for-itself," which is the reality underlying and determining the world of experience, and, as such, a real and not a hypothetical entity. Schopenhauer never speaks of it in the plural, as Kant does, and so keeps consistently to a monistic point of view. He says, "The way in which Kant introduced such a thing-in-itself and sought to reconcile it with his philosophy was faulty." This concerns Kant's method, against which Schopenhauer directs the full force of his criticism. The fundamental principle of Kant's method Schopenhauer takes to be the starting from indirect, reflective knowledge: Philosophy is for Kant a science of conceptions, while for himself it is a science *in* conceptions; philosophy being a conceptualised or *generalised* statement of our knowledge. Schopenhauer sees all Kant's errors contained in the following sentence from the *K. d. r. V.*: "If I take away all thought" (through the categories), "from empirical knowledge, there remains absolutely no knowledge of an object, for through mere perceptions nothing at all is thought." In endeavoring to construct a philosophy out of pure conceptions Kant failed to solve the problem, in having the thing-in-itself left on his hands. This proved to Schopenhauer that the path of abstract reflection was closed as the path of philosophy. Mr. Caldwell demurs to Schopenhauer's statement that the "Æsthetic" is Kant's only discovery, yet as the "Æsthetic" shows the tendency to conceptual abstraction, his view of Space and Time is of extreme importance. It is of the "Logic" of the *K. d. r. V.* that Schopenhauer's criticism is materially and formally most radical. He gives a different account of the functions of the Soul, rejecting altogether the faculty-distinctions of Kant: he associates Kant's faculty of

Understanding more with Sense and the category of Cause with the spatio-temporal or perceptual construction of the world, and holds the other eleven categories to be mere blind windows put into a scheme through Kant's love of symmetry; and, secondly, he holds Kant's account of Reason to be utterly false, and substitutes his own doctrine of the thing-in-itself for Kant's three Ideas of Reason. By Reason Schopenhauer means the power the mind has of forming general conceptions and of knowing by way of conception or idea, the matter for conceptions and ideas being of course derived from Perception. Reasoned knowledge is an abstraction from perceived knowledge, and all knowledge, as Schopenhauer says, is originally and in itself perceptive. The confusion in Kant's account of the elements entering into knowledge, is Schopenhauer's reason for holding that Kant can only have had the fundamental principle of his method imperfectly present to his mind. His whole difficulty in relating the elements of knowledge to each other arose from the fact that he in his thought likened the categories to conceptions through want of an explicit and persistent recognition of the nature of conception. Schopenhauer himself classifies the categories according to the planes or stages of experience they characterise: the perceptual, the mathematical, the logical, and the ethical in order. The categories are all abstractions, but not conceptions or notions. Conceptions are a particular kind of abstractions, and so are categories: to conceptions *material* entities correspond, but to categories only relations or forms. Knowledge consists in the detection of relations existing between the different planes or sections of the perceptual continuum, the difference in perceived things being that some are immediately and others only mediately perceived. The true reason of Schopenhauer's revolt from the method of conceptions is to be found in the difficulties in which he felt himself involved by the theory of Subjective Idealism. Philosophy, he says, is a search for the Thing-in-itself, but he tells Kant that from the idea nothing but the idea follows, and that the path of Reflexion or Knowledge is closed as the path of philosophy. Had Schopenhauer kept more true to his ruling that knowledge is originally and in itself perception, he would not have maintained that the world is my idea. The Thing-in-itself is the shadow cast by the Reflective or Abstracting Understanding. With both Kant and Schopenhauer it is primarily invented to get rid of the difficulty bred of a belief in an abstraction or unreality, and as it is a pure mental fiction, we may safely deny that there is any such thing in reality.

Mr. Wallaschek finds the origin of music in a rhythmical impulse in man. The sense of rhythm arises from the general appetite for exercise, which recurs in rhythmical form owing to sociological as well as psychological conditions. On the one hand, there is the social character of primitive music, compelling a number of performers to act in concert. On the other hand, our perception of time-relations involves a process of intellection, by means of which the mind is able to comprehend them as a whole. Since music is produced not merely as an auditory impression and expression, but also in order to evoke reflexion, it must contain the qualities of time-order and rhythm. Mr. Herbert Spencer's theory of the origin of the general appetite for exercise is said to afford the most valid explanation. It is the surplus vigor in more highly evolved organisms, exceeding what is required for immediate needs, in which play of all kinds takes its rise. We owe our musical faculty to the time-sense rather than to our sense of hearing. The perception of particular tones and tunes plays a very low part, if any, in primitive music. In almost all the examples furnished by ethnology, we see that music is the expression of emotion, which is also one of the sources of human language. Mr. Spencer is said to be wrong, however, in thinking that musical modulation originates in the modulations of speech

Music and speech have a reciprocal influence, and primitive human utterance, using sound-metaphors and onomatopœia, may resemble primitive musical tones. Nevertheless, an early separation of distinct tones and indistinct sounds seems to have taken place, not as a transition from the one as prior to the other as succeeding, but as a divergence from a primitive state which is, strictly speaking, neither of the two.

Professor Cattell objects that the theories of Darwin and Spencer on the origin of music, describe what probably took place, rather than explain why it was necessary that it should have taken place. As to Spencer's explanation of harmony, he affirms that it amounts to saying that harmony gives pleasure because it is pleasant. After referring to the connection of harmony with the existence of overtones, Prof. Cattell states that music is not, as commonly supposed, a creation of the imagination, freer than the other arts from a physical basis, but is rather a discovery and a development. All the combinations of music are latent in the sounds of nature, and the history of music bears witness to the gradual adoption of such as are more remote. The difference in voices rests on the overtones present, and the immense emotional effects of music are due to the fact that music expresses the emotion of the human voice, using and developing those combinations of tones which the voice uses when moved by sorrow and joy, despair and exultation.

By the *Coefficient of External Reality*, Professor Baldwin means the something which attaches to some presentations in virtue of which we attribute reality to them; while others, not having the coefficient, are discredited. Diametrically opposed solutions of this question are held. To one class of writers, the coefficient of the reality of an image is its independence of the will; to another class, the coefficient is subjection to the will. If we make a distinction between a memory-coefficient of reality—that is, the something about a memory which leads us to believe it represents a real experience—and a sensational coefficient, that is, the criterion of present sensational reality, we see that those two kinds of reality differ in their relation to the will. A present sensible reality is not under the control of any will, but a memory coefficient is subjected to will, in the sense that we are able to get the image again as a sensation by repeating the series of voluntary muscular sensations which were associated with it in its first experience. This memory-coefficient of external reality must be distinguished from the coefficient of memory itself; the latter being the feeling that an image has been in consciousness before, i. e. recognition, or sense of familiarity. A true memory is an image which I can get at will by a train of memory-associates, and which, when got, is further subject to my will. (London: Williams & Norgate.)

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I. No. 4.

CONTENTS:

THE MODERN CONCEPTION OF THE SCIENCE OF RELIGION. By Prof. *Edward Caird*.

THE FUNCTIONS OF ETHICAL THEORY. By Prof. *James H. Hyslop*.

THE MORALITY OF NATIONS. By Prof. *W. R. Sorley*.

J. S. MILL'S SCIENCE OF ETHOLOGY. By *James Ward*.

VICE AND IMMORALITY. By *R. W. Black*.

THE PROGRESS OF POLITICAL ECONOMY SINCE ADAM SMITH. By *Francis W. Newman*.

PROGRAMME OF SCHOOL OF APPLIED ETHICS.

DISCUSSIONS: The Moral Aspect of "Tips" and "Gratuities." By *Christine Ladd Franklin*.

Ideas and facts, says Professor Caird, are continually being woven together as warp and woof, into the web of man's intellectual life. The idea of the unity of mankind has within the last century become an almost instinctive presupposition of all civilised men. It has special application to the history of religion. In a man's religion we have expressed his ultimate attitude to the universe. Even atheism or agnosticism involves a definite attitude towards the ultimate problem of human life. The modern ideas of the organic unity and the organic evolution of man inevitably compel us to seek for the one principle of life which is striving towards the full realisation of itself.

Professor Hyslop remarks, that two questions may be asked: (1) Why is it that any disturbance in ethical speculation at once brings men up in arms about the consequences? (2) Why is there such a tendency even in speculative ethics to bring its theories into harmony and sympathy with "practical" problems? The preliminary answer is the distinction between science and art. The aim of science is to find causes; the aim of art to produce ends by means of these causes. But art may be divided into productive and practical art. Every consideration of the scope and aim of ethics shows it to be both a science and an art. As a science it endeavors to explain something; as an art, to realise something. Its complications are thus twofold. Ethics may be a science in two distinct relations. First, it aims to show the general conception which will reduce the various motives actually governing human conduct to unity. Secondly, it aims to show the end that ought ideally to govern conduct, and this is the supreme object of ethics as a science.

In relation to the Morality of Nations, Professor Sorley says that the relations of the state, diplomatic or military, with other states may be compared with the relations of one individual to another, but the two sets of relations are not the same. A crime is an act punishable by law, and it is absurd therefore to speak as if the state, acting legally, could commit a crime. But if theft ceased to be a crime it would be as much an offense against morality as before. Taxation to which the taxed have not consented and unfair taxation cannot be regarded as theft, as some suppose. Individual morality becomes mixed with national morality when those through whom the state acts act for themselves and for their own interests, instead of for the common good. Within a nation the state is above all individuals, but there is no corresponding superior power over nations. What remains is a general obligation upon states to observe justice in their dealings with one another. National morality differs from individual morality in that a nation's first duty may be said to be to itself. There is no selfishness, there is only patriotism, in its recognising the fact and acting upon it. The intercourse of nations can only reach a full measure of development under a common moral law, which recognises the rights of one nation as of equal value with the rights of any other.

Mr. Ward points out, that Mill, in his exposition of what he called Ethology, or the Exact Science of Human Nature, repeated in all the issues of his "Logic," remarks that Ethology must first proceed deductively. The laws of the formation of character "are derivative laws, resulting from the general laws of mind, and are to be obtained by deducing them from those general laws." There was a want of clearness in Mill's conception of an individual. The notion of a Self proved, on his own admission, "the real stumbling block" to his psychological theory. In discussing the influence of remarkable men, Mill allows that "whatever depends

on the peculiarities of individuals, combined with the accidents of the positions they hold, is necessarily incapable of being foreseen." When we attempt to estimate the influence of circumstances on individuals, we must often know how the circumstances appear to *them*,—this personal equation so to say is frequently incalculable.

In the main, says Mr. Black, sin exists intimately in, or as an inseparable affection or potentiality of, the person as a whole, and to discourage it is to discourage the person, and tantamount, therefore, to discouraging his goodness as well. At this point the division of sin into vice and immorality becomes essential to a rational solution. Immorality is crime against living moral agents. Vice may be defined as the spending of the forces of one's own life to the detriment of its moral capabilities.

Mr. Francis W. Newman, who began the study of Political Economy seventy years ago, when he was sixteen, gives in this article his views on the evils of land tenure in England.

Mrs. Franklin thinks "the subjective feeling of worth and dignity" which distinguishes the people of this country will be injured by "giving fees to our inferiors when they perform some service for which they are (or ought to be) otherwise well paid." That the matter is not "absolute ethics" is apparent from the fact that in Japan a totally different sentiment prevails. The editor, Prof. Josiah Royce (under the signature of J. R.) in commenting on Mrs. Franklin's communication, after referring to the evils of the German custom of Trinkgeld as detailed by v. Ihering, says that if it harms the manhood of our writers to "tip" them the mischief should be met by organised devices such as v. Ihering proposes, and not by individual action. (Philadelphia: *International Journal of Ethics*, 1602 Chestnut Street.)

Ω.

REVUE PHILOSOPHIQUE.

CONTENTS: June, 1891. No. 186.

LES RESULTATS DES THEORIES CONTEMPORAINES SUR L'ASSOCIATION DES IDEES.

By *B. Bourdon*.

COMMENT LA SENSATION DEVIENT IDEE. By *J. Payot*.

NOTES ET DISCUSSIONS. QU'EST-CE QUE LA PHYSIOLOGIE GENERALE? By *Durand (de Gros)*.

CONTENTS: July, 1891. No. 187.

LA NOTION DE LIMITE EN MATHÉMATIQUES. By *G. Milhaud*.

COUP D'OEIL SUR L'HISTOIRE DE LA PHILOSOPHIE EN RUSSIE (I). By *F. Lannes*.

LES SOURCES DE LA PHILOSOPHIE DE L'INDE. By *P. Regnaud*.

M. Bourdon reviews the modes of association proposed by various psychologists, and the factors which intervene to give force to associations. Wundt alone among psychologists has the great merit of not placing ideas and sensations in actual opposition. The laws of ideology are almost the same as those of physics; and the law of association ought to be true not only for ideas, but for sensations and for objects. M. Bourdon's conclusion is that the theory of the association of ideas has hitherto been treated from a too subjective and idealistic point of view. He would substitute for the theory of association of idea a theory of a society of phenomena, which conception he thinks better explains the process.

In a preceding contribution to the *Revue Philosophique* (May, 1890) M. Payot showed that sensation is the translation into terms of consciousness of that which,

considered from the objective point of view, is a reaction of the organism, as a whole, to an external impression. Sensations are the irreducible element of the psychic life. They contribute the materials which the mind modifies, combines, and classes according to their relations, variable or invariable. This is chronologically posterior to sensation, which has an affective origin. The reactions corresponding to the most frequent sensations become more and more rapid until consciousness, "which translates only physiological states of a sufficient duration," has not time to appear. Here we have a reflex-act. In an intermediate zone where reactions take a time sufficient for them to be conscious, the intellectual states, to which the abstract name of the intellectual faculty has been given, have birth. Differentiation operates between sensible and intellectual facts, until they seem to belong to two irreducible faculties; but the intellectual states are grafted on the sensible states, and although the graft develops so greatly that the sensibility appears like a parasite, the latter is the primitive trunk and through it the graft exists by a kind of continued creation. Sensations are convenient abstractions but nothing more. A sensation never presents itself in the adult consciousness without a crowd of instantaneously evoked relations. There is never absolute exclusion between perception and sensation: these are two states which dissolve into each other, which have no difference in nature, and which are separable only in gross. Properly speaking there are no sensations, only perceptions more or less complex. In sensation the state of mind is considered in itself without reference to its relations; in perception attention is paid chiefly to the relations. But sensation exists only for consciousness, as it can never enter directly into intellectual constructions, but only through the state of remembrance. Every sensation so far as we are sensible of it is purely felt, and we effectuate our mental constructions not with sensations, but with our remembrances of sensations. But the role of sensation is still more restricted. However rapid its flight across consciousness it instantaneously provokes the remembrance of numerous sensations of differences and resemblances with anterior sensations. It is an occasion for this, and nothing more. To be perceived, a sensation must be followed by sensations different from itself. The mind seizes relations of resemblance between sensations and resemblances between relations: it classes them, the chaos unravels and organises itself. The organisation has been progressive, but at all stages the procedure is alike; it consists in disengaging remembrances more or less masked by dissimilarities: this is the universal procedure of the mind and the condition *sine quâ non* of thought.

In his article on *General Physiology*, M. Durand (de Gros) in criticism of M. Ch. Richet's article on this subject which appeared in the April number of the *Revue Philosophique*, points out that Richet in applying the term "general anatomy" to the anatomy of the tissues, and "special anatomy" to the anatomy of the organs, overlooked the fact that *generality* and *speciality* when used to express the two opposite sides of a science express relations of abstract, nominal extension and not real extension. Thus, by general chemistry is intended the consideration of the higher laws governing the molecular actions of bodies, the one on the other, whatever that may be, and the modes of composition which result therefrom for each of them. General physiology should be, therefore, the philosophy of the science of the functions of life, that is to say, the higher laws embracing all these various particular functions; special physiology having for its object these particular functions in what is proper to each of them and distinguishes it from the others. Physiology has reference, however, to the other animals as well as man, and also to plants, and hence the term general physiology has been applied to the physiology common to

all living beings, and special physiology to that which concerns the various animal and vegetal species taken separately. But this is in reality comparative physiology, and thus positive physiologists have made a false use of the term general physiology, and have left the true general physiology unrecognised and unnamed. In conclusion, M. Durand presents his conception of "organology."

In the form of a dialogue M. Milhaud meets the objections made to the notion of limit in Mathematics. The question whether to have a limit, for anything variable, is not synonymous with attaining a limit, is considered in connection with Zeno's problem of Achilles and the tortoise, the strict solution of which is, not that Achilles will never overtake the tortoise, but that he will not overtake it on this side of a spot situated at a distance of $\frac{1}{8}$ of a metre from the starting-point, within a period equal to $\frac{1}{8}$ of a second commencing at the instant of starting. To the objection that by its very nature the limit cannot be attained, as where the limit and the variable element which indefinitely approaches it are essentially different, it is replied that when a variable element has a limit, this element is a *quantity* and the limit is a quantity of the same kind, quality being neglected. In the proposition: the length of the circumference is the limit of the perimeters of the inscribed polygons, the limit is a quantity of the same kind, that of length. It is not necessary to know whether the definition accords with reality. M. Milhaud then shows by reference to the properties of an unlimited series of inscribed polygons and the corresponding circumscribed polygons, that two such series of geometrical lengths satisfying the required conditions can always be considered as defining a new length, superior to all the first and inferior to all the others. As to its existence, it can be said only that a length exists only as determined, as limited; and a state of length, or a particular length has a right to exist, provided that the properties of quantity which condition it are not contradictory. The essence of mathematical space, breadth, length is only the content of their definitions. Mathematics owes its existence to the condition of creating for itself a world of fictions. There is a divergence of opinion as to whether incommensurables should be represented by lengths or by numerical symbols, but the divergence is a last echo of the endless discussions which the notions of infinity and continuity have raised among mathematicians.

Philosophic thought, says M. Lannes, presents, in Russia, in its past history, a very poor condition. Philosophy does not exist, unless that name be given to such moral precepts, or domestic recommendations as we find in "the instruction" of a Vladimir Monomaque or in the "Domostroi." The Russian mind was easily guarded against the liberties of thought, regarding science and philosophy with contempt and holy dread. There, as during the Middle Ages in the rest of Europe, the end to attain, to which all others were subordinated, was the safety of the soul. It was only with Peter the Great that thought took a freer flight, notwithstanding the restrictions that it had still to support. The Little Russians were the first to turn towards western instruction. In order to meet the Jesuits, who appeared in Russia about the middle of the 16th century, with the arms they used, scholastic philosophy was introduced into the college of Pierre Mohila, at Kief. Aristotle was taken as guide and the teaching was in Latin. Under Alexis Mikhailovitch, rational, natural, and moral philosophy began to be taught in a formal manner at the Academy of Moscow. Peter the Great ordered an important place to be given to rhetoric and dialectics, and the mention of logic, psychology, and metaphysics in the programme of the Academy. In 1755 logic, metaphysics, and morality entered into the teaching of philosophy at the University. In the 18th century two currents of ideas manifested themselves, of which some are connected with mysticism, others

with the influence of French philosophy. The former became associated, through Novikof and Schwartz, with free-masonry, which was regarded as a means of acquiring a knowledge of God, of nature, and of man, of becoming a better Christian, a better citizen, and a better family head. Novikof and Schwartz founded the "Society of the Friends of Instruction," and through their zeal a mass of moral and religious books were published for distribution in places of instruction. The influence of the French "philosophers" of the 18th century was preponderant in Russia in the second half of the 18th century. Voltaire enjoyed the greatest favor, and his renown was universal. Freethought penetrated the middle classes, and even conservative and religious men denied miracles in the course of history, considered religion as a political instrument, and attacked the ignorance and cupidity of the clergy. On the happening of the French revolution Catherine was frightened and took rigorous measures against those who wished to use freedom of thought.

Questions of pedagogy held a great place in the thoughts of Catherine. She confided the care of pedagogic reforms to Betski, who showed that true education is that which unites the development of the body, of the mind, and of the heart; but the moral element ought to have the first place. Alexander I. re-established philosophic liberalism and sought to excite interest in social, economic, and political questions. The university of Moscow was reorganised, and one of the faculties included dogmatic and moral theology, theoretical and practical philosophy, natural, political and popular rights. Philosophy also established itself in the new universities of Kharkof, Kazan, and Petersburg. But minds were possessed with more living ideas and various tendencies, political, moral, religious, sceptical, led to the establishment of numerous secret societies whose starting point was the masonic alliance. About 1816, Schröder had introduced into the foreign lodges a spirit of cosmopolitan humanity. Fessler saw in the lodges a means of moral education, the basis of civic education. In order to be received as a mason, it was necessary to pass through certain "consecrations," to obtain certain "degrees of knowledge." Among those "consecrated" by Fessler was Spéranski who, notwithstanding his mysticism, was imbued with the principles of the Revolution. On the reaction under Prince Galitzyn, the minister of public instruction, science was given a mystical end, and religion was declared to be the supreme science. The sciences which could do injury to religion, as geology, were either discarded, or directed to be taught according to the spirit of Holy Scripture. As to philosophy, the teaching of moral philosophy, which does not separate morality from the faith, was alone allowed. The treatises of the Kantian Jacob were forbidden, as containing scandalous theories. In general, in the universities, during the first year of the nineteenth century the objects of philosophic study were somewhat vague. The utility of the sciences, of education, of the individual characters of peoples, enthusiastic discourses on free will, on the rights of reason, on the spirit and forces of nature. Fessler and Vellanski introduced the German philosophy and principally that of Schelling, which became in some sort the lever which put in movement ideas on the independence and the nationality of civilisation. The most ardent champion of Schelling's doctrine was Odoievski, whose external personality marks curiously the idea entertained of philosophy and philosophers between 1820 and 1845. A philosopher was represented as a sort of romantic Faust, leading a kind of life different from common mortals. If he occupied himself with physical sciences, the philosopher was regarded as the equal of a sorcerer with terrible powers. M. Lannes concludes his present article with a sketch of the life and philosophy of Galitch, who on his return to St. Petersburg from a three years tour through

Europe wrote a dissertation on philosophy, in which he explained the development of beings by the double action of *activity* and *passivity*, the one being cause, the other product. In 1819 Galitch taught in the University logic, psychology, and metaphysics, and later he received authority to teach the history of philosophy, to which he gave an *eclectic* character, in accordance with the instructions of his hierarchical superiors. In his *esoteric* teaching he initiated his friends into the philosophy of Schelling. In that year he published a "History of Philosophic Systems," the appearance of which was a rare novelty in the Russian Scientific World. He subsequently published several other works, but the manuscript of one on the "Philosophy of the History of Humanity," which cost him much labor was destroyed by fire. The merit of Galitch is to have wished to establish in Russia philosophy *as science*. He assigned to the study of philosophy the whole encyclopedia of the sciences, but true philosophic knowledge is the knowledge of the unity from which external phenomena flow. M. Lannis gives an analysis of Galitch's "Picture of Man," where, before M. Renouvier, he says of freedom, "it can itself begin an entire series of phenomena, which are then linked together in the relations of dependence, that is to say are the necessary acts of a voluntary principle." Galitch deserves to occupy a small place in the general history of the philosophy of humanity. If there existed before him a science of the relations of the soul and the body, he was at least one of the first to elaborate a programme of what is called to-day *comparative psychology*.

M. Regnaud finds the sources of the philosophy of India in India itself, as they appear in all their simplicity and primitive character in the Rig-Veda, the very ancient collection of liturgical hymns of the Brahmins. The whole doctrine implied by both the Vedic cult and the text of the hymns is resumed in a verse of the Rig Veda. "Each day the same liquid rises and descends; the rains vivify the earth, the fires of the sacrifice vivify the sky." The libations destined to feed the fire of sacrifice and which consisted of inflammable liquids, such as the *ghrita* or clarified butter, were poured out each time that the sacrifice was celebrated into the atmosphere (or the sky) whose life they maintained, in like manner as liquid and solid foods sustain the life of man. The whole religious conception of the Vedic epoch consists then in the idea of an endless *circulus*, of a perpetual exchange of the elements of life, in an immense body which is the universe, whose arterial centre is the sacrifice, and the fire the motor, the distributor, and so to say the brain. (Paris: Félix Alcan.) Ω.

REVUE DE L'HYPNOTISME. April, 1891. No. 10. 5th YEAR.

CONTENTS:

- (1) ACCOUCHEMENT DANS L'HYPNOTISME. By Dr. Fraipont and M. J. Delbauf.
 - (2) ACCOUCHEMENT PENDANT LE SOMMEIL HYPNOTIQUE. By Dr. M. G. Kingsbury.
 - (3) MEMOIRE RELATIF A CERTAINES RADIATIONS PERÇUES PAR LES SENSITIFS. By Baron de Reichenbach.
 - (4) DISCUSSIONS ET POLEMIQUE: La Nutrition dans l'hypnotisme. By Gilles de la Tourette and H. Cathelineau.
 - (5) RECUEIL DE FAITS: Contribution à l'application de la thérapeutique suggestive. By Dr. P. Van Velsen.
- Huit observations d'accouchement sans douleur sous l'influence de l'hypnotisme. By Dr. Marie Dobrovolsky. REVUE BIBLIOGRAPHIQUE.

Dr. Fraipont terminates his interesting memoir with the remark that save under very exceptional circumstances, as when the subject is very sensitive or has

before suffered a sort of trance, hypnotism can scarcely have any practical importance in accouchment. M. Delbœuf refers in a postscript to the case of a patient described in his writings by the initial J. . . ., and states that her accouchment confirms him in his view of the rôle of the brain, which he regards as a moderating and inhibiting organ, and consequently in the opinion expressed by him in the *Revue Philosophique* as to the essence of freedom, which he regards as having an arresting and not an inciting effect.

MM. de la Fourette and Cathelineau confirm the conclusion drawn from researches made by them for Professor Charcot, that nutrition is affected during the hypnotic sleep, and therefore that hypnotism is a pathological condition. (Paris: 170 Rue Saint-Antoine.)

PHILOSOPHISCHE MONATSHEFTE. Vol. XXVII. Nos. 9 and 10.

CONTENTS:

GOETHE'S VERHAELTNISS ZU SPINOZA UND SEINE PHILOSOPHISCHE WELT-ANSCHAUUNG. By *G. Schneege*. I.

WILHELM WUNDT'S "SYSTEM DER PHILOSOPHIE." By *Johannes Volkelt*. I.

RECENSIONEN: (1) A. Fouillée, *L'Avenir de la métaphysique fondée sur l'expérience*. By *C. Schaarschmidt*. (2) Th. von Varnbüler, *Widerlegung der Kritik der reinen Vernunft*. By *E. König*. (3) Bericht über neuere Erscheinungen aus dem Gebiete der Geschichte der Aesthetik. By *E. Kühnemann*. (4) C. Baeumker, *Das Problem der Materie in der griechischen Philosophie*. By *P. Natorp*.

LITTERATURBERICHT.

Johannes Volkelt continues his review of Wilhelm Wundt's "System of Philosophy." Prof. C. Schaarschmidt criticises Fouillée's view of a future metaphysics as based upon experience, from the Kantian standpoint. Dr. E. König explains with sufficient strength the futility of Varnbüler in his bold attempt of refuting Kant's "Critique of Pure Reason," and Dr. Paul Natorp, the editor, devotes an article to Prof. Clemens Baeumker's book "Das Problem der Materie in der Griechischen Philosophie," in which the author sets forth that the problem of matter is not a limited problem, but the sum total of all those questions which have reference to the existence of some cause of sensory phenomena which in its nature is different from consciousness. The problems of psycho-physics and of the theory of cognition are modern and were unknown to the ancients. Their standpoint remained throughout that of realism. A résumé of the views of Greek philosophers from Thales down to the New Platonists follows.

The leading article is devoted to Goethe's relation to Spinoza and his philosophical world-conception.

Goethe's philosophical and religious opinions are naturally of the greatest interest, because Goethe, the child of nature in the highest sense of the word, represents a genius not such as our great contemporary Cesare Lombroso conceives him to be, i. e. a species of the abnormal man and a kind of insane person, but such as genius is conceived by the layman, i. e. an abnormally normal man, a man whose excellencies lie in a rare harmony of highly developed perfections—not in eccentricities. Goethe's eccentricities were not worse or more extended than those of average people, but he had more sense, more humor, more depth, and more spirit. Well, Goethe as a son of man and as a type of an unusually perfect man was a poet, a

philosopher, a scientist, an historian, an artist, a man of the world, and a man of practical life, all in one, and the opinions of this man in the religio-philosophical field show at least that they accord with man as a child of nature.

Goethe's philosophical views were strongly influenced by Spinoza yet not so as if Spinoza had impressed his view upon Goethe. Goethe happened to read Spinoza's "Ethics" while still immature in mind and felt himself powerfully attracted by the spirit of the book. "What I may have read out of or into that work," he writes, "I could give no account. Yet I found a pacification of my passions. A great and free vista upon the sensual and moral world seemed to open before my eyes. That strange sentence '*He who loves God must not demand of God to love him in return*,' with all its premises and conclusions filled all my thoughts. To be unselfish in everything and most so in love and friendship was my highest delight, my maxim, my practice, so that the bold expression of later years '*If I love thee, it is none of thy business*' came right from my heart. In addition to this, it must be recognised that the most intimate combinations result from contraries. The all-pervading calmness of Spinoza contrasted with my excited aspirations, his mathematical method was a counterpart of my poetical thoughts and habits." In Spinoza's doctrine of necessity Goethe found comfort concerning man's dependence upon the outer world which caused him so much pain. It is probable that the famous sentence of the liberation from passions through a clear comprehension of them was very sympathetic to Goethe, for it is a characteristic feature of his poetry that they were confessions as well as liberations of all that moved and disturbed him. As soon as Goethe was able to give to himself a clear account concerning that which had affected his soul and as soon as he could give a poetical form to it so that it became something independent and outside of him, he gained, in the sense of Spinoza's doctrine of liberation from passions, the peace and liberty of his soul. Yet Spinoza's doctrine of necessity was a metaphysical conception. Goethe transferred it into the domains of practical ethics, thus giving rise to his idea of resignation. Goethe writes in the beginning of the sixteenth book of "*Wahrheit und Dichtung*": "Our physical as well as our social life, customs, habits, worldly wisdom, philosophy, religion, even many incidental events, everything demands of us that we should resign ourselves. So many things which most intrinsically belong to us we are not allowed to develop. That of the outer world which we want as a complement of our nature is taken away and many things which are foreign to us and disagreeable are thrown upon us. We are deprived of everything that we have with difficulty acquired, of everything that is friendly and before we fully comprehend it we find ourselves obliged to *surrender our very personality*, first piecemeal and finally in its entirety." Professor Schneege says that Goethe's practice of resignation gave him solace when he felt low-spirited concerning the limits of human willing and wishing and hoping, and his resignation was as a matter of principle a total resignation. A partial resignation leads to the pessimistic outcry "All is vanity," yet the total resignation affords an inner peace and produces that "air of peace," *die Friedensluft* as Goethe calls it, which surrounds us when reading Spinoza.

One of Goethe's maxims is quite Spinozistic. Goethe says (*Max. und Refl. Abth. v.*): "He who declares himself to be free will feel himself at once dependent but he who dares to declare himself dependent, feels himself free."

Goethe rejected the idea of a personal and transcendent Deity which was urged so strongly upon him by Lavater. Rejecting Lavater's view, he says (*Wahrh. und Dicht. xiv.*): "I assured him in accord with my Realism which is inborn as well

as acquired that since it had pleased God and Nature to make me as I am, I must remain so." The expression "God and Nature" savors strongly of Spinoza's "Deus sine natura."

According to Eckermann (*Gesp. m. G. ii, p. 169*) Holbach's *Système de la nature* had also made a strong impression upon Goethe. Nevertheless he was dissatisfied with the spirit of French materialism. He says: "How empty and hollow is this sad atheistic twilight, in which the earth with all its forms and the heaven with all its stars disappear. Matter only is said to exist, being in motion from eternity to eternity, thus producing to the right and to the left without further ado all the innumerable phenomena of being." Goethe's view of "God and nature," did not deny the Deity as such, but identified both in the sense of Spinoza. In this sense Goethe interpreted the sentence: *Qui deum amat conari non potest, ut Deus ipsum contra amet—si homo id conaretur, cuperet ergo ut Deus quem amat, non esset Deus*. The latter idea, "if a man wished that God should love him in return, he would wish that God be not God" is a corollary only to the impersonal conception of Spinoza's non-anthropomorphised Deity. We cannot and we must not think of God as a human being who like a monarch makes favorites of those who are faithful not so much to the divine laws of ethics but to God personally.

Goethe agreed in his views of Spinoza with Herder, who in a letter to Jacobi writes: "The *πρώτον ψεύδος*, my dear Jacobi, in all anti-spinozistic systems is that God is supposed to be the great *ens entium*, the cause of all phenomena, a cypher, an abstract idea which we have formulated. However, that is not so according to Spinoza; God is to him the most real and active unity which says to itself 'I am that I am, and shall be in all the changes of my phenomena that which I shall be.' What you mean, my dear fellows, by an existence outside of the world, I do not understand. If God does not exist in the world, and indeed, everywhere unlimited in his totality and entirety, he does not exist at all. The limitation of personality does not belong to the infinite being, since a person originates with us by limitation as a kind of *modus* or as an aggregate of beings whose activity is endowed with the illusion of unity." A modification of Spinoza's view consists in the recognition of the creative activity which Herder attributes to God. In another letter to Jacobi, Herder writes: "You wish God in the shape of man like a friend who thinks of you. Consider that in that case he must think humanly of you. If he is partial to you he will be partial against others. Explain to me why you need him to be human. He speaks to you, he affects you through all noble men who are his organs and most so through his organ of organs, the core of his spiritual creation, his only begotten. I must confess that this philosophy makes me exceedingly happy. Goethe has read Spinoza since your departure and it is a test case to me that he has conceived him exactly as I do."

Herder was a clergyman and he held the highest position of his church, being Superintendent General. Would the protestant state churches of to-day either in England or in Germany have room for a man like Herder?

Goethe concurred with Herder, that the idea of an extramundane Deity has no sense, an outside God is powerless and an immanent God alone is a reality. He puts in the mouth of Faust the following lines:

"The God that in my breast is owned
Can deeply stir the inner sources.
The God above my powers enthroned
He cannot change external forces."

Faust I, Scene 4, Tr. Bayard Taylor.

Spinoza makes a difference between *natura naturans* and *natura naturata*. A similar contrast is made by Goethe in the following lines which are found among the *Zahme Xenien*, Part vii.

" Life dwells in each celestial body
And on its self-selected roads
It likes to travel with the others.
There are in our earth's deep abodes
The forces, shrouded now in night
And rising up again to light.
If with eternal repetition
Some circles infinitely roam,
If thousand stones in strong construction
Together build life's glorious dome,
Then through all things is pleasure thrilling.
The great, the little, both are blessed,
Yet all this yearning, all this striving
In God the Lord, is eternal rest." *

According to Schneege, Goethe was an agnostic. Faust says :

" Mysterious even in open day
Nature retains her veil, despite our clamors.
That which she doth not willingly display,
Cannot be wrenched from her with levers, screws and hammers."
I, 1. Tr. Bayard Taylor.

This quotation however expresses Faust's despair and not Goethe's philosophical view. It is true that Goethe has made a few utterances which savor of agnosticism, but most of them are expressive of the idea that we can never be through with our wisdom ; every new solution proposes new problems.

" Will mich jedoch des Worts nicht schämen :
Wir tasten ewig an Problemen." *Zahme Xenien*, vii.

[Will not be ashamed of the confession :
We are dealing with problems without intercession.]

How little Goethe was in accord with the view of modern agnosticism or phenomenalism, that we know the outside of nature only and not her inside, can be learned from his opposition to Haller's famous lines :

" Nature's Within from mortal mind
Must ever lie concealed.
Thrice blessed e'en he, to whom she has
Her outer shell revealed."

In answer to the agnostic sentiment of the famous naturalist, Goethe answered with the following verses (quoted in the translation given in "Fundamental Problems," p. 142):

" Nature's 'within' from mortal mind"
Philistine, sayest thou,
" Must ever lie concealed ? "
To me, my friend, and to my kind
Repeat this not. We trow
Where'er we are that we
Within must always be.
" Thrice blessed e'en he to whom she has
Her outer shell revealed ? "
This saying sixty years I heard

* Specially translated for *The Monist*.

Repeated o'er and o'er,
 And in my soul I cursed the word,
 Yet secretly I swore.
 Some thousand thousand times or more
 Unto myself I witness bore:
 Gladly gives Nature all her store,
 She knows not kernel, knows not shell,
 For she is all in one.

But thou,
 Examine thou thine own self well
 Whether thou art kernel or art shell."

We ought to bear in mind that Goethe was no philosopher in the strict sense of the word and did not attempt to have a system that should be free from contradictions. So we read in one place: "Man is not born to solve the problem of the world, but to seek for the limit of the incomprehensible and then to remain within the limits of the comprehensible," and in another place "Man must hold fast to the belief that what seems incomprehensible is comprehensible, for otherwise he would cease to investigate."

The idea of evolution was the basis of Goethe's idea of immortality. Here also he remains in accord with Herder who had proposed in his "Ideas for a Philosophy of the History of Mankind" his views of the development of beings by degrees. Goethe wrote from Rome (See "Herder's Nachlass," ed. Düntzer, Frankfurt, 1756, i, p. 17.): "How much I enjoy Herder's 'Ideas,' I can scarcely express. Since I expect no Messiah, this [viz. the prospect of further evolution] is to me the dearest Gospel."

Goethe's idea of the soul is not clearly worked out in its philosophical aspect. He speaks of souls as of monads and believes in a migration of the soul. "I am sure," Goethe said to Falk, "I have been here some thousand times and expect to come again some thousand times."

Goethe was very decided in practical and ethical respects. Goethe deviated from Spinoza by introducing a strong trait of individualism into Spinoza's cosmism.

"Zweck sein selbst ist jegliches Thier."*

[Every creature has its purpose in itself.]

And man is the last product of constantly higher evolving Nature—*das letzte Product der sich immer steigenden Natur*. Nature's intention according to Goethe's view is to produce constantly more perfect creatures. He says: "Imagine Nature standing as a gamester before the roulette table constantly shouting *au double*. With all she has won through all the phases of her activity she continues to play on into infinity. Stone, plant, animal, everything is risked in such hazarding ventures again and again, and who can tell whether man himself is not but a venture for a higher aim." Death was to Goethe no destruction but a dissolution. A destruction or annihilation appeared as an impossibility to him. And his idea of immortality was not one of existence after death but of a continued activity. In the year 1825 Goethe declared to Chancellor von Müller ("Gespräche m. d. Kanzler von Müller," p. 99), that he should not know what to do with an immortality in which he would not find new tasks to do and new difficulties to conquer. (Heidelberg: Georg Weiss.)

aps.

* *Metamorphose der Thiere.*

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE
DER SINNESORGANE. Vol. II. No. 4.

CONTENTS:

ZUR PSYCHOLOGIE DER KOMPLEXIONEN UND RELATIONEN. By E. Meinong.

WUNDT'S ANTIKRITIK. By C. Stumpf.

UEBER DIE UNTERSCHIEDSEMPFINDLICHKEIT FUER KLEINE ZEITGROSSEN. Eine vorläufige Mitteilung. By F. Schumann.

LITTERATURBERICHT.

Professor A. Meinong discusses Ch. v. Ehrenfels's article "Ueber Gestalt-qualitäten" * adding the results of his own investigations suggested to him by this essay. Ehrenfels starts from Professor Mach's consideration of figure and melody (see Mach's *Beiträge zur Analyse der Empfindungen*) and proposes the question, What are figure and melody in themselves? Are they merely a combination of elements or are they something in contradistinction to their elements, something entirely new? Melodies and figures, says Ehrenfels, can be so transposed that not any one of their original elements will remain. Thus the similarity of figures in space as well as of tones is something different from the similarity of their elements; they must be something different than their mere sum. This is "the figure-quality" or *Gestaltsqualität*, and Ehrenfels distinguishes between two kinds, (1) those of time (2) those of space, which he calls (1) *Tongestalten* and (2) *Raumgestalten*. In addition to these are discussed the figure-qualities of sensations and of inner apperception. Ehrenfels proposes the psychological question whether these figure-qualities are immediately given together with their foundations or whether they must be considered as the product of a special activity, and he decides in favor of the former possibility. Professor Meinong whose work has been in similar lines, refers to his article "Phantasievorstellung und Phantasie" † and criticises the term "figure-quality," proposing in its stead the words *fundierend* and *fundiert*, using the German term *Fundament* as a correlative expression of "relation." There is no relation without complexity and psychological experience has actually to deal with complex facts only. Melody and figure are names for the totality of the foundations including their "founded" contents.

It may be that we are unduly prejudiced in favor of our own terminology, but it seems to us that the expression "form" will prove to be the most appropriate word. Form is neither quality nor quantity, but form can produce qualities. Let the same qualities, say of chemical elements, combine in different forms, and we shall obtain substances with different qualities. Figure and melody are special kinds of form. Forms consist in and originate through combination, and the unity produced through a special form-combination is actually something new, as much so as if it were a special-creation act. This wonderful power of form makes the study of form all-important in all branches of science. A neglect of the study of form will lead either to materialism when matter and motion are conceived as the only quality-producing factors, or to agnosticism as soon as a deeper inquiry proves that matter and motion are not sufficient to explain the most essential properties of the objects of investigation. We cannot judge from the present article how much

* *Vierteljahrsschr. f. wissenschaft. Phil.* 1890. 3, p. 249-292.

† *Zeitschrift für Phil. u. philos. Kritik.* Vol. 95, p. 173. 1889.

Ehrenfels and Meinong are in sympathy with our standpoint, but we can see that their efforts are in the same direction.

The second article is a rejoinder by Prof. C. Stumpf of Munich to Prof. W. Wundt's reply to his critic. Professor Stumpf complains of Wundt that he ignored the points raised in his criticism and that his "Antikritik" consisted only of "a chain of distortions and insinuations."

F. Schumann publishes his results regarding sensibility for the difference between smallest quantities of time. He employed a chronograph modified in two respects from Wundt's chronograph. First he replaced the expensive chronometer by a treading-wheel and introduced Pfeil's time-marker, which, as he thinks, is handier as well as more precise than Wundt's time-marker. Schumann's results agree with the results of Professor Mach showing a maximum of 0.3 — 0.4 seconds, the relation of the perceptible difference to the normal time being in different persons only 0.022. (Hamburg and Leipsic: L. Voss.) KPS.

PHILOSOPHISCHES JAHRBUCH. Vol. IV. No. 3.

CONTENTS:

ENTHAELT DIE CHEMISCH-PHYSIKALISCHE ATOMTHEORIE WIDERSPRUECHE? By *S. J. Linsmeier.*

NOCH EINMAL ZU PLATON'S TIMAEUS p. 51 E—p. 52 B. By *Clemens Bacumker.*
DAS GESETZ VON DER ERHALTUNG DES LEBENS. (Zusatz der Redaction.) By *W. Frye.*

DIE LOGISCHEN GAENGE DES DENKENS. By *Dr. G. Grupp.*

W. WUNDT'S SYSTEM DER PHILOSOPHIE. By *C. Gutberlet.*

RECENSIONEN UND REFERATE.

The publishers and editors of *The Monist* are not Roman Catholics and we suppose that the majority of our readers are not either. But all the more it appears to us necessary to state as a matter of justice that the Roman Catholic publications (i. e. those which avowedly and confessedly represent Roman Catholic thought) are far superior to their analogous Protestant contemporaries. The latter are debating their particular sectarianisms and do not seem to be interested in the progress of their times. They do not heed the discoveries of science or the views of philosophers, they live in a world of their own. It is different with Roman Catholics. The present magazine proves that they have thinkers among them who keep abreast of the time. It is true that there is more discipline in the camp of Roman Catholics which shuts their champions out from free enquiry in a certain direction concerning some fundamental tenets; but with all this discipline goes along a broad-mindedness in attacking the different problems of modern science and philosophy and bringing them into harmony with the Roman Catholic faith.

The *Philosophisches Jahrbuch* is published by the *Görres-Gesellschaft* and edited by Dr. Const. Gutberlet. Jacob Joseph Görres is the well-known champion of the Catholic Church (1776–1848)—a restless spirit who began his public career as an enthusiastic defender of the French Revolution for the propagation of which he published a fanatical journal *Das rothe Blatt*. With the rise of Napoleon he despaired of the cause of liberty, but he took courage again in the war of independence (1813–1815). In his journal *Der Rheinische Merkur* he denounced bitterly those Germans who still held to the French; he recommended his countrymen to have more love for their language, customs, and traditions and exhorted the princes to stand united against the common foe and re-institute the empire. The

war over he was persecuted by the Prussian government on account of his renewed interests in revolutionary affairs (he had published in 1820 a pamphlet "Germany and the Revolution") and showing a decided inclination to mysticism ("Emanuel Swedenborg, his Visions and his Relation to the Church," 1827) he joined the Ultramontane party in the conviction that his ideals could be realised in the Roman Catholic Church. The rest of his life he remained faithful to Rome and was the most active, the most vigorous, and also the ablest defender of Roman Catholic views and interests. The present magazine is a Quarterly conducted with scholarship and tact, although as a matter of course not without that prejudice which necessarily results from the principle of giving all thoughts into captivity under a special and foredetermined faith. The last volume (vol. iii) is rich in interesting articles. Prof. Dr. Hayd, strange enough, defends the liberty of investigating the authority of faith, which the editor, however, without rejecting the idea offhand considers as bold (*gewagt*). There are articles on the freedom of will, on the infinite number of possibilities, mongolian cosmology, Pascal's position toward scepticism, analogies between cognition of God and cognition of nature with special reference to Kant's criticism of the evidences of the existence of God. The present number of vol. iv contains an article on the chemico-physical theory of atoms. The question is proposed whether or not this theory contains contradictions. The author starts from Dalton's Definition, whom he regards together with Wallaston as the founder of modern atomism. The four weightiest objections are considered, but the author arrives at the conclusion that all of them are based upon misconceptions. He sums up: "Chemists and Physicists do not repudiate eyes and senses when proposing and defending the atomistic theory. On the contrary they use for their view and build it upon an exceedingly richer material of observation than is employed by their antagonists. . . . This denial of the validity of the most important objections, however, does not imply that the atomistic theory is without difficulties, gaps, unexplained details, etc. It is not as yet so certain a fact as for instance the heliocentric world-conception. It is an hypothesis still and will have to remain such for quite a long time. Yet we can confidently assert that the difficulties are by far less than those offered to the acceptance of the Copernican hypothesis at the time of the first condemnation of Galileo (1616) which were solved afterward by Galileo in the year 1632. We have further to state that the atomistic theory has been developed more and more since Dalton, the number and the importance of the explanations offered in it have constantly increased."

Dr. Frye of Jena discusses Preyer's latest view of "The Self-Gubernation of Life—*Die Selbststeuerung des Lebens*" which appeared in a recent number of the *Naturwissenschaftliche Wochenschrift* (Berlin). Preyer considers his newly discovered law as a corollary to the conservation of matter and energy and maintains that the total amount of life in the world is as much constant as are matter and energy. Living mass (M_z) plus inanimate mass (M_n) are constant (C); $M_z + M_n = C$. So far scientists will agree, but Preyer adds that each separate item is constant for itself. He declares that "the total amount of protoplasm in the world remains unchanged in quantity." It is hardly probable that Preyer's view will be adopted by science.

Dr. Grupp discusses the logical paths of thought, and the editor, Professor Dr. Gutberlet explains and criticises Wundt's System of Philosophy.

One of the most valuable features for Catholic readers must be considered the book reviews. Here the thoughts of the most advanced thinkers are as it were digested for the Catholic world. The material is carefully sifted but the exposition

of heretic opinions is not evaded. The criticisms from the pen of Dr. Gutberlet are often trenchant and should not be left unheeded by the adversaries of the Church. (Fulda: Verlag der Fuldaer Aktien-Druckerei.) KPS.

RIVISTA ITALIANA DI FILOSOFIA. July and August, 1891.

CONTENTS:

LA SCIENZA DELL' EDUCAZIONE NELLE SCUOLE E NELLE RIVISTE ITALIANE. By *F. Cicchitti-Suriani*.

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ALCUNE CONSIDERAZIONI SULL'ECLETTISMO. By *L. Ferri*.

BIBLIOGRAFIA, ETC.

The Science of Education in Italian Schools and in Italian Reviews. Every nation is said to possess a peculiar physiognomy of its own, through which it is distinguished from every other nation; and consequently any nation will adopt a system of education that is best suited to its own national genius, to its racial, religious, and historical traditions. This may be true in a purely practical sense; but on the other hand, education, theoretically, as science or pedagogics, passes the narrow limits of any state or form of government, and ought to be ruled by principles and general laws common to the entire human family. Historically, ever since the 16th century, the educational movements in Italy have been directly called forth by the Catholic revival and reaction during and immediately following the period of the renaissance. Such was the origin of the *Filippini*, *Ignorantelli*, *Barnabiti*, *Ignaziani*, *Calasanziani*, *Somaschi*, and of many other religious teaching-bodies that have made Italy until recently a bustling arena of ecclesiastical educational systems.

The Philosophy of Empedocles. This first instalment of Signor Ferrari's studies deals with the cosmological ideas of the great Agrigentine poet-philosophers. From the formation of the first elements to the highest functions of the human soul throughout, we perceive that everything is governed by the same laws, and that which is best, all happiness in fact, is only found in unity and harmony, evil and pain in disagreement and in separation. The law of evolution, in the modern sense of the word, prevails everywhere in the physical system of Empedocles. Yet his philosophy did not exclusively consist in mechanical evolution. To his cosmological doctrines were added moral and religious tenets, which, however, are not evolved continuously with the former. (Rome. Tipografia delle Terme Diocleziane di G. Balbi—160 Via Cavour, 162.) γυλν.

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ETHICS OF LIFE AND OF THE FREE IDEAL. By *K. Ventzel*. (In this article the writer explains and criticises the well-known ethical theories of the late French thinker M. Guyau.)

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LETTERS ON COUNT TOLSTOI'S BOOK. "On Life." (Conclusion.) By *A. Kozloff*. (The writer concludes his letters to Mr. N. N. with remarks to the effect that Count Tolstoi's philosophy in all its aspects and phases is manifestly characterised by a principle of *dualism*. In the development of this general principle through the different phases of his system and in his theory of knowledge this dualism might assume the name of rationalism, in metaphysics, that of idealism, and in ethics the name of ascetical, quietistic eudemonism.)

ON DETERMINISM IN CONNECTION WITH MATHEMATICAL PSYCHOLOGY. By *N. Shishkin*. Lecture delivered before the Moscow Psychological Society. February, 1891.

THE DOMAIN AND LIMITS OF SUGGESTION. By *N. Bajenoff*. Lecture delivered at the annual session of the Moscow Psychological Society. January, 1891.

ANENT THE FICTIONS OF PROFESSED CHRISTIANITY. By *Vladimir Solovieff*.

(This article has appeared in an English translation in *The Open Court*, Nos. 206 and 208, under the title "Christianity: Its Spirit and its Errors." It is a remarkable contribution to the literature of to-day. Professor Nicolas von Grote of Moscow writes about its author: "Vladimir Solovieff is at present, besides the Count Tolstoi, our most eminent thinker; he is a distinguished philosopher as well as theologian. . . . You Americans should be familiar with his works on religious and ecclesiastical 'questions.' Vladimir Solovieff is the author of the following works: "The Religious Foundations of Life," "The Dogmatic Development of the Church," "Judaism and the Christian Question." (These titles are translated from the Russian.) Other writings of his are "L'idée russe," "La Russie et l'église universelle," "Geschichte der Theokratie.")

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